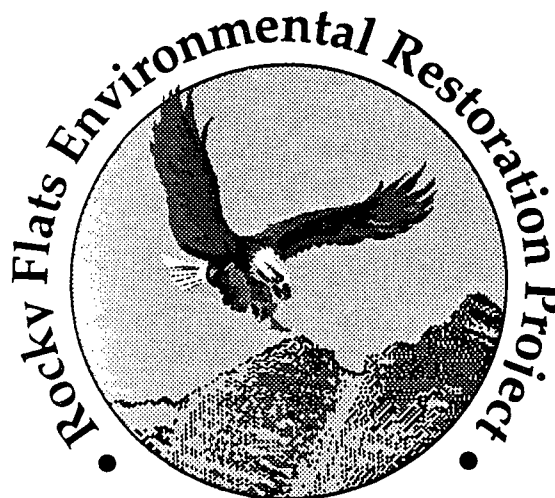




# DOE, RFO Environmental Restoration Program

Monthly Report  
for December 1993



January 20, 1994

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**SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR DECEMBER 1993**

The Preliminary Draft of the Operable Unit (OU) 2 Phase II Resource Conservation and Recovery Act (RCRA) Facilities Investigation/ Remedial Investigation (RFI/RI) Report was delivered to the agencies on December 16, 1993. Comments from the agencies are scheduled to be returned to RFP by February 18, 1994.

The regulatory agencies and DOE agreed upon the "remedial alternative" for the OU 4 Phase I Interim Measure/Interim Remedial Action (IM/IRA) Program. Development of a conceptual design for the engineering barrier will start immediately.

Deliveries of high-density polyethylene tanks to OU 4, Solar Ponds, continue. Six tank sets were received and five were installed in Tent 3. Tank deliveries are scheduled to continue at a rate of eight tank sets per week through January 1994.

All Rocky Flats Plant (RFP) Engineering and Technology activities necessary to begin vacuum trucking operations in OU 4 were completed. All required construction activities are complete except for some floor patching in Tent 4 and tank vent installation. The new procedures to start-up are complete and are undergoing nuclear safety screens. The Special Assessment Checklist was approved December 23, 1993.

OU 10 was granted approval to begin nonintrusive field activities. Surficial soil sampling began in Individual Hazardous Substance Site (IHSS) 170, OU 10, on December 10, 1993. Five samples per day were collected, and the sampling in the Property Utilization and Disposal (PU&D) Yard was completed December 30, 1993.

The OU 14 Final Phase I RFI/RI Work Plan was approved by EPA in December 1993.

A performance meeting was held on December 20, 1993, for the Interim Measures/Interim Remedial Action Plan (IM/IRAP). At this meeting, a proposed document outline was submitted to the regulators for review. This outline was approved prior to the December 24, 1993, holiday shutdown. Preliminary sections from the document were passed out for review and comment.

The draft final Industrial Area (IA) Integrated OUs (8, 9, 10, 12, 13, 14) Environmental Evaluation (EE) packet, which included the Implementation Plan, Field Sampling Plan (FSP), Phase I Data Summary Addendum, Phase II Data Summary, Phase III Data Summary, and IA EE Technical Memorandum (TM), was received by DOE on December 15, 1993.

The schedule and strategy for the Pond Water Management IM/IRA were discussed by DOE and EG&G in December 1993. DOE requested that the agencies submit comments on the Draft IM/IRA by December 17, 1993. DOE reviewed the Draft IM/IRA and prepared a position paper/summary statement in December 1993. DOE will give EG&G guidance and direction concerning future actions on the IM/IRA by January 17, 1994. A revised draft schedule for the Pond Water IM/IRA Decision Document (DD) was prepared that includes

schedule assumptions made by DOE concerning the DD. Required modifications to the project schedule and scope will be based on the guidance and direction received from DOE on January 17, 1994.

**IAG PERFORMANCE INDICATORS FOR MONTHLY REPORT**

<b><u>Number of IAG Table Six Milestones to Date</u></b>	<b><u>Current FY94 (10/1/93 - 9/30/94)</u></b>	<b><u>Since IAG Inception</u></b>
Scheduled (including approved extensions)	5	102
Met	0	88
Extensions Granted	0	27
Extensions Denied	0	2
Remaining this FY94 (to 9/30/94)	37	n/a
Added	0	5
Deleted	1	5

<b><u>Deliverables in Review by Regulators</u></b>	<b><u>Project</u></b>	<b><u>Date Submitted</u></b>
	OU 1 Final Phase III RFI/RI Report	15 Nov 93
	OU 2 Draft Phase II RFI/RI Report	16 Dec 93

<b><u>Field Work Currently Under Way</u></b>	<b><u>Project</u></b>	<b><u>Scheduled Complete</u></b>
Please note: these dates reflect scheduled field work and completed field work.	OU 2	08 Oct 93
	OU 3	13 Jul 93
	OU 4	Jan 96 <sup>a</sup>
	OU 7	30 Apr 93
	OU 8	16 Sep 94
	OU 9	18 Aug 94
	OU 10	15 Aug 94
	OU 12	05 Sep 94
	OU 13	17 Feb 95
	OU 14	11 May 95
	OU 15	12 Nov 93

<sup>a</sup> for field work Phases I and II

<b><u>IM/IRA Status</u></b>	<b><u>Gallons Treated</u></b>
OU 1 881 Hillside Treatment	1,882,509 gallons
OU 2 903 Pad Water Treatment	19,866,815 gallons
OU 4 Water Management Tasks (ITS and Pondwater)	3,008,964 gallons

<b><u>IAG Document Deliverables Due Next 6 months</u></b>	<b><u>Due Date</u></b>	<b><u>Expected Date</u></b>
OU 1 Draft CMS/FS Report	11 Feb 94	31 Mar 94 *
OU 1 Draft Responsiveness Summary	06 May 94	02 Nov 95
OU 1 Final Proposed Plan	04 Jan 94	17 May 95 *
OU 1 Draft Responsiveness Summary	06 May 94	02 Nov 95
OU 1 Final Phase III RFI/RI Report	30 Mar 94	30 Mar 94
OU 2 Draft Proposed Plan	10 May 94	26 Jun 97
OU 3 Final CMS/FS Report	10 May 94	26 Jun 97
OU 3 Draft Phase I RFI/RI Report	14 Feb 94	02 Nov 93 *
OU 4 Draft Phase I Proposed IM/IRA Decision Document (DD)	14 Apr 94	13 Apr 94
OU 4 Draft Phase II RFI/RI Work Plan	22 Apr 94	13 Apr 94
OU 5 Final Phase I RFI/RI Report	03 May 94	18 Oct 95
OU 6 Draft Phase I RFI/RI Report	10 Jun 94	21 Oct 94
OU 7 Final Phase I RFI/RI Report	16 Mar 94	02 Sep 94 *
OU 8 Draft Phase I RFI/RI Report	14 Feb 94	12 Nov 15
OU 9 Draft Phase I RFI/RI Report	11 Apr 94	04 Jan 01
OU 12 Draft Phase I RFI/RI Report	20 Apr 94	11 Mar 99

**DOE, Rocky Flats Plant**

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<u>Overdue Deliverables</u>	<u>Due Date</u>	<u>Expected Date</u>
OU 1 Draft Proposed Plan	27 Sep 93	30 Sep 94 *
OU 1 Final Phase III RFI/RI Report	15 Nov 93	04 Mar 94 *
OU 2 Draft Phase II RFI/RI Report <sup>a</sup>	12 Mar 93	16 Dec 93 *
OU 2 Final Phase II RFI/RI Report	09 Aug 93	23 May 94 *
OU 2 Draft CMS/FS Report	04 Nov 93	17 Oct 96 *
OU 5 Draft Phase I RFI/RI Report	30 Nov 93	09 Feb 95 *
OU 7 Draft Phase I RFI/RI Report	12 Oct 93	21 Jun 94 *

\* Completion date to be rescheduled because of HHRA issues work stoppage.

<sup>a</sup> Partial delivery, because of the HHRA issues work stoppage.

### **PROBLEMS AND PROGRAMMATIC ISSUES**

The Human Health Risk Assessment (HHRA) stop work order continues to affect OUs 2 through 7. The result has been a reduction in work being completed and major impacts on the project schedules. DOE conducted meetings during December 1993 with the EPA and Colorado Department of Health (CDH) to discuss the HHRA stop work order issue. On December 24, 1993, DOE delivered to the regulatory agencies a modified data aggregation proposal. Meetings will continue among the regulatory agencies and DOE until this issue is resolved.

Installation of permanent plant power continues to be an urgent item for the OU 2 Field Treatability Unit (FTU). Without permanent power, the FTU will continue to experience shutdowns caused from generator failure. The engineering package for construction is complete.

CDH approval is needed to modify the interim status of the 750 Pad (RCRA Unit 25) to allow storage of drill cuttings. Drill cuttings produced during the recent drilling evolution in the B-series ponds are currently in 90-day accumulation, pending approval to store them in Unit 25. The 90-day accumulation period for the first-generated cuttings will expire in early February 1994. Storage after this period will be non-compliant unless the permit modification is approved or another permitted storage site is utilized.

No decision has been made regarding responsibility for materials removal in the Industrial Area (IA) Individual Hazardous Substance Site (IHSS). DOE does not want Environmental Restoration (ER) funds to fund RFP Plant Services activities. Until this issue is resolved, no efforts will be made to begin work on removing all materials found in or around IHSS's 170/174 and 176. However, work will proceed in areas where material storage will not adversely affect data collection activities.





**NEAR-TERM IAG TABLE SIX MILESTONES**

<u>OU#</u>	<u>IAG</u> <u>Milestone Description</u>	<u>Date Scheduled</u> <u>to EPA/CDH</u>	<u>Status</u>
2 <sup>a</sup>	Submit Draft Phase II RF/RI Report	12 Mar 93	Extension denied (delinquent)
2 <sup>a</sup>	Submit Final Phase II RF/RI Report	9 Aug 93	Extension denied (delinquent)
1	Submit Draft Proposed Plan	27 Sep 93	Extension request submitted
7 <sup>a</sup>	Submit Draft Phase I RF/RI Report	12 Oct 93	*
2 <sup>a</sup>	Submit Draft CMS/FS Report	04 Nov 93	*
1	Submit Final Phase III RF/RI Report	30 Mar 94	Extended from 04 Jan 93
5 <sup>a</sup>	Submit Draft Phase I RF/RI Report	30 Nov 93	*
1	Submit Final Proposed Plan	04 Jan 94	Extension request submitted
1	Submit Draft CMS/FS Report	11 Feb 94	Extended from 31 Mar 93
3 <sup>a</sup>	Submit Draft Phase I RF/RI Report	14 Feb 94	Extended from 16 Jul 93
8	Submit Draft Phase I RF/RI Report	14 Feb 94	*
7 <sup>a</sup>	Submit Final Phase I RF/RI Report	16 Mar 94	*
9	Submit Final Phase I RF/RI Report	11 Apr 94	*
4	Submit Draft Phase I Proposed IM/IRA Decision Document	14 Apr 94	On schedule
12	Submit Draft Phase I RF/RI Report	20 Apr 94	*
4	Submit Draft Phase II Work Plan	22 Apr 94	On schedule
5 <sup>a</sup>	Submit Final Phase I RF/RI Report	03 May 94	Extension request submitted
1	Submit Draft Responsiveness Summary	06 May 94	*
2 <sup>a</sup>	Submit Final CMS/FS Report	10 May 94	*
2 <sup>a</sup>	Submit Draft Proposed Plan	10 May 94	*
6 <sup>a</sup>	Submit Draft Phase I RF/RI Report	10 Jun 94	Extended from 4 Aug 93
4	Submit Final Phase I Proposed IM/IRA Decision Document	24 Jun 94	On schedule
8	Submit Final Phase I RF/RI Report	12 Jul 94	*
15	Submit Draft Phase I RF/RI Report	01 Aug 94	On schedule
1	Submit Final CMS/FS Report	03 Aug 94	*
1	Submit Final Responsiveness Summary	03 Aug 94	*
1	Submit Draft CAD/ROD	03 Aug 94	*
13	Submit Draft Phase I RF/RI Report	08 Aug 94	*
2 <sup>a</sup>	Submit Final Proposed Plan	09 Aug 94	*
10	Submit Draft Phase I RF/RI Report	25 Aug 94	*
9	Submit Final Phase I RF/RI Report	06 Sep 94	*
7 <sup>a</sup>	Submit Draft Phase II RF/RI Work Plan	13 Sep 94	*
12	Submit Final Phase I RF/RI Report	15 Sep 94	*
4	Submit Final Phase II RF/RI Work Plan	19 Sep 94	On schedule
11	Submit Draft Phase I RF/RI Report	20 Sep 94	*
3 <sup>a</sup>	Submit Final Phase I RF/RI Report	21 Oct 94	Extended from 13 Dec 93
1	Submit Final CAD/ROD	01 Nov 94	*
1	Submit CD/RD Work Plan	01 Nov 94	*
7 <sup>a</sup>	Submit Draft Phase I Proposed IM/IRA DD	01 Nov 94	*
6 <sup>a</sup>	Submit Final Phase I RF/RI Report	18 Nov 94	Extended from 07 Jan 94
2 <sup>a</sup>	Submit Responsiveness Summary	13 Dec 94	
14	Submit Draft Phase I RF/RI Report	20 Dec 94	

\* Behind original IAG schedule; extension required.

<sup>a</sup> OU 2 through OU 7 may require additional extensions because of HHRA issues work stoppage.



## SECTION 1. INTRODUCTION

This monthly status report presents the current status and technical achievements of the Rocky Flats Environmental Restoration Program for December 1993. This program implements the Interagency Agreement (IAG) among the U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA), and the State of Colorado to investigate, assess, and remediate, where necessary, contaminated areas at or adjacent to DOE's Rocky Flats Plant in Golden, Colorado. This agreement was signed on January 22, 1991. The work is being performed for DOE by EG&G Rocky Flats, Inc.

The Executive Summary of the report highlights significant achievements, summarizes milestone information, and presents any major unresolved issues of the program. Technical progress, schedule status, and milestone status for each Operable Unit (OU) as well as other program activities are presented in Section 2. Section 3. contains the schedules for routine environmental sampling as required by Paragraph 210 of the Interagency Agreement. Section 4. contains a list that identifies the contractors and subcontractors performing work on the program as required by Paragraph 13 of the IAG.



## SECTION 2. PROJECT STATUS

**2.1 OU 1 - 881 HILLSIDE AREA**

The alluvial ground water at the 881 Hillside Area, located north of Woman Creek in the southeast section of Rocky Flats Plant (RFP), was contaminated in the 1960s and 1970s with solvents and radionuclides. The area is approximately 2 miles from the eastern, outer edge of the plant's buffer zone at Indiana Street. The various Individual Hazardous Substance Sites (IHSS) that make up OU 1 were being investigated and treated as high-priority sites because of potentially elevated concentrations of organic compounds in the near-surface ground water and the proximity of the contamination to a drainage system leading to an offsite drinking water supply. The selected Interim Remedial Action (IRA) at OU 1 involved construction of an underground drainage system called a French drain that intercepts and contains near-surface ground water flowing from the OU 1 area. The near-surface water is treated at the 891 treatment facility, designed for this purpose, and released onsite into the South Interceptor Ditch (SID) along Woman Creek. Water collected from this ditch undergoes a secondary analysis prior to release. IRA construction was completed in April 1992. The Remedial Investigation and Feasibility Study (RI/FS) to determine the final remedial action are continuing in parallel with operation of the IRA.

**2.1.1 OU 1 ASSESSMENT**

**Scope of Work Changes This Period**      None

**Technical Approach Changes This Period**      None

<b>IAG Milestone Accomplishments</b>	Submit Draft Phase III RFI/RI Work Plan	06 Feb 90
	Submit Final Phase III RFI/RI Work Plan	31 Oct 90
	Submit Draft Phase III RFI/RI Report	28 Oct 92

**Future IAG Milestones Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Final Phase III RFI/RI Report	04 Jan 93	15 Nov 93	30 Mar 94
Submit Draft CMS/FS Report	31 Mar 93	11 Feb 94	06 Aug 94
Submit Final CMS/FS Report	27 Sep 93	03 Aug 94	02 Feb 94
Submit Draft PP	27 Sep 93	Pending	02 Feb 95
Submit Final PP	04 Jan 94		12 May 95
Submit Draft Responsiveness Summary	06 May 94		11 Sep 95
Submit Final Responsiveness Summary	03 Aug 94		09 Dec 95
Submit Draft CAD/ROD	03 Aug 94		09 Dec 95
Submit Final CAD/ROD	01 Nov 94		08 Mar 96
Submit Draft Title II Design	05 Jul 95		09 Nov 96

**DOE, Rocky Flats Plant**

**December Work Activity  
Status**

**Remedial Investigation (RI)** - A meeting was held on December 3, 1993, to present Section 4 (Nature and Extent) and Section 5 (Fate and Transport) of the Final Phase III Resource Conservation and Recovery Act (RCRA) Facilities Investigation/Remedial Investigation (RFI/RI) Report to EPA and CDH. The regulatory agencies are completing their review of the OU 1 Phase III RFI/RI Final Report and are expected to submit their comments on January 7, 1994.

EPA, CDH, DOE, and EG&G had discussions concerning the Nature and Extent of Contamination at OU 1. In addition to addressing some Phase III specific concerns (summary figures, locations of specific data points, investigation of hot spots), these discussions have underscored several technical issues including selenium and vanadium as contaminants when they are probably naturally occurring and the widespread occurrences of toluene, which is probably a sampling/handling/laboratory artifact.

On December 2, 1993, DOE met with EPA and EG&G to present the plans for evaluating the suitability of the dense non-aqueous phase liquids (DNAPL) site at Individual Hazardous Substance Site (IHSS) 119.1 for the Six-Phase Ohmic Soil Heating/Soil Vapor Extraction Demonstration Project. On December 27, 1993, a soil-gas survey was performed and the survey indicated that there were not sufficient DNAPLs in this area for this site to be suitable for this project.

Revision of the OU 2 Statement of Work (SOW) to include this SVS was submitted to RFP Procurement. This SVS, including preparation of the field report, is scheduled for completion by January 14, 1994.

**Feasibility Study/Corrective Measures Study (FS/CMS)** - A meeting was held among EPA, CDH, and DOE on December 23, 1994, to discuss the scope of activities in the CMS/FS, and explore ways to accelerate the program. Many portions of the CMS/FS are contingent upon the final results of the Phase III RFI/RI and have been placed on hold.

**Technical Memoranda**

**Project**

**OU 1 881 Hillside**

TM #10  
TM Title  
TM Status

Preliminary Remediation Goals  
Submitted Draft TM to DOE: Feb 93  
EPA has submitted comments on TM #10. CDH comments are expected in January 1994.  
When preparation was concluded or is estimated to be concluded:  
Projected date of submittal to EPA/CDH: Upon receipt of CDH comments.  
Actual date of submittal: N/A  
Date when comments were received: N/A

TM #11  
TM Title  
TM Status

Alternative Array  
Submitted Draft TM to DOE: 21 Oct 93 - Delayed by stop work order.  
When preparation is concluded or is estimated to be concluded:  
Projected date of submittal to EPA/CDH: TBD  
Actual date of submittal: N/A  
Date when comments were received: N/A

**Planned Work for January**

- Continue work on the FS; complete alternatives array and begin nine criteria analysis.
- Begin response to agency comments in preparation of the Final Phase III RFI/RI Report.

**Problems**

None

**Open Items**

Many portions of the FS/CMS, such as Technical Memorandum (TM) #10, Preliminary Remediation Goals (PRG), and TM # 11, Alternatives Array, are contingent upon the final results of the Phase III RFI/RI Report.

**2.1.2 OU 1 REMEDIATION**

**Scope of Work  
Changes This Period**                      None

**Technical Approach  
Changes This Period**                      None

<b>IAG Milestone Accomplishments</b>	Submit Draft Proposed IM/IRA Decision Document	18 Sep 89
	Submit Proposed IM/IRA Decision Document	06 Oct 89
	Submit Final IM/IRA Decision Document	05 Jan 90
	Begin Phase I-A IM/IRA Construction	15 Jan 90
	Restart Phase I-A IM/IRA Construction (after shutdown)	20 Jun 90
	Begin Phase I-B IM/IRA Construction (ahead of schedule)	28 Sep 90
	Submit IM/IRA Implementation Document	22 Feb 91
	Begin Phase II-A IM/IRA Construction	01 Apr 91
	Begin IM/IRA Testing	05 Aug 91
	Begin Phase II-B IM/IRA Construction	03 Sep 91
	Complete IM/IRA Construction (891 treatment building)	02 Mar 92
	Complete IM/IRA Construction (French drain)	13 Apr 92

**Future IAG Milestones  
Through FY95**                      None

**December Work Activity  
Status**

The pH on effluent Tank T-206 was successfully adjusted to within discharge standards. Results from laboratory analysis indicate that the pH is now 8.6. A 3 day turnaround is expected on the general chemistry samples (Volatile Organic Compounds [VOC], metals, water quality). Currently, obtaining rush sample analysis is difficult because of a high volume of samples at the laboratories.

The initial analysis of effluent Tank T-207 indicated that the Total Dissolved Solids (TDS) level (512 milligrams per liter (mg/l) exceeded the Applicable or Relevant and Appropriate Requirements (ARAR) of 400 mg/l. However, after careful review of all water quality data, it appears as though these results are not accurate. A second sample was taken and shipped to the laboratory



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**Project Status**

in order to verify whether the original results are correct. The second sample showed that the TDS was actually well below discharge standards. All other parameters for this tank were within treatment requirements.

Optimization testing for the gas chromatograph is near completion, and the gas chromatograph will be delivered in January 1994.

Treated ground water this month: 187,316 gallons  
Total treated water: 1,882,509 gallons

**Planned Work for January**

- Continue routine collection and treatment of ground water.
- Begin installation of gas chromatograph.

**Problems**

None

**Open Items**

None



## **2.2    OU 2 - 903 PAD, MOUND, AND EAST TRENCHES**

The contamination at the 903 Pad and Mound areas is largely attributed to the storage in the 1950s and 1960s of waste drums that corroded over time, allowing hazardous and radioactive material to leak into the surrounding soil. Additional contamination may have resulted from wind dispersion during drum removal and soil movement activities. The East Trenches Area was used for disposal of plutonium- and uranium-contaminated waste and sanitary sewage sludge from 1954 to 1968. Two areas adjacent to the trenches were used for spray irrigation of sewage treatment plant effluent; some may have contaminants that were not removed by the treatment system.

An Interim Measure/Interim Remedial Action (IM/IRA) provides for surface water in source areas of contamination to be collected, treated, and discharged to the surface water drainage. Operation of a field-scale treatability unit for the South Walnut Creek drainage began in May 1991. The effectiveness of the treatment process is evaluated at three locations: the entrance to the treatment facility, several points within the facility, and the discharge point. After completion of the field-scale treatability tests, the unit is anticipated to remain in service until the final remedial action is operational. The RI and FS are continuing in parallel with the IRA.

A second IM/IRA was established in late-1991. This Subsurface Investigation Interim Measure/Interim Remedial Action Plan/Environmental Assessment (IM/IRA/EA) is north of Woman Creek and encompasses the 903 Pad, the Mound Area, and the East Trenches Area of OU 2. This IM/IRA evaluates a remedial technology actions for removal of residual free-phase Volatile Organic Compound (VOC) contamination from three distinct subsurface environments at OU 2. Each of the VOC-removal actions involve in situ vacuum-enhanced vapor extraction technology. The interim remedial actions for the collection of information will aid in the selection and design of final remedial actions that address subsurface, residual free-phase VOC contamination at OU 2.

### **2.2.1    OU 2 ASSESSMENT**

**Scope of Work Changes  
This Period**                      None

**Technical Approach  
Changes This Period**                      None

<b>IAG Milestone Accomplishments</b>	Submit Draft Phase II RFI/RI Work Plan (Alluvial)	21 Dec 89
	Submit Final Phase II RFI/RI Work Plan (Alluvial)	12 Apr 90
	Submit Draft Phase II RFI/RI Work Plan (Bedrock)	05 Feb 91
	Submit Final Phase II RFI/RI Work Plan (Bedrock)	02 Jul 91

**DOE, Rocky Flats Plant****Future IAG Milestones  
Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase II RFI/RI Report	12 Mar 93	Denied	16 Dec 93*
Submit Final Phase II RFI/RI Report	09 Aug 93	Denied	23 May 94*
Submit Draft CMS/FS Report	04 Nov 93		17 Oct 96*
Submit Final CMS/FS Report	10 May 94		26 Jun 97*
Submit Draft PP	10 May 94		26 Jun 97*
Submit Final PP	09 Aug 94		13 Jan 98*
Submit Responsiveness Summary	13 Dec 94		30 Jun 98*
Submit Draft CAD/ROD	16 Mar 95		02 Dec 98*
Submit Final Responsive Summary	16 Mar 95		02 Dec 98*
Submit Final CAD/ROD	15 Jun 95		10 Aug 99*

\*TBD due to HHRA issues work stoppage.

**December Work Activity  
Status**

The Preliminary Draft of the Phase II RFI/RI Report was delivered to the regulatory agencies on December 16, 1993. Comment responses are scheduled for February 18, 1994, from the regulatory agencies. The Draft Final Contaminants of Concern (COC) TM was delivered to DOE and the regulatory agencies on December 8, 1993. Comments are scheduled from the regulatory agencies on the COC TM by January 14, 1994. The regulatory agencies have not resolved their differences on the data aggregation for the Baseline Risk Assessment.

**Treatability Study/Feasibility Study (TS/FS) - A** revised schedule was prepared and was presented to DOE on December 16, 1993. The Evaluation of the Data Sufficiency Report is complete and is being reviewed. Work continues on the Comprehensive List of Technologies.

**Technical Memoranda****Project****OU 2-903 Pad, Mound, and East Trenches****TM #5****TM Title****TM Status****Exposure Scenarios**

When preparation is concluded or is estimated to be concluded: 15 Jan 93

Projected date of submittal to EPA/CDH: 15 Jan 93

Actual date of submittal: 15 Jan 93

Date when comments were received: 11 Feb 93 EPA, 1  
2 Mar 93 CDH

TM #6  
TM Title  
TM Status

Modeling  
When preparation is concluded or is estimated to be concluded: 15 Jan 93  
Projected date of submittal to EPA/CDH: 15 Jan 93  
Actual date of submittal: 15 Jan 93  
Date when comments were received: 01 Apr 93 EPA,  
31 Mar 93 CDH

TM #7  
TM Title  
TM Status

Surficial Soils  
When preparation is concluded or is estimated to be concluded: 07 Jan 93  
Projected date of submittal to EPA/CDH: 07 Jan 93  
Actual date of submittal: 12 Jan 93  
Date when comments were received: 21 Jan 93  
TM Approved

TM #8  
TM Title  
TM Status

Bedrock  
When preparation is concluded or is estimated to be concluded: 15 Mar 93  
Projected date of submittal to EPA/CDH: 15 Mar 93  
Actual date of submittal: 15 Mar 93  
Date when comments were received: 14 Apr 93 EPA,  
14 Apr 93 CDH

TM #8 Addendum  
TM Title

TM Status

Contingency Plan for revised Phase II RFI/RI Work Plan (Bedrock)  
When preparation is concluded or is estimated to be concluded:  
Projected date of submittal to EPA/CDH: None  
Actual date of submittal:  
Date when comments are received:

TM #9  
TM Title  
TM Status

Chemicals of Concern  
When preparation is concluded or is estimate to be concluded: 24 Aug 93  
Projected date of submittal to EPA/CDH:  
Actual date of submittal: 8 Dec 93  
Date when comments are received: 14 Jan 94

**DOE, Rocky Flats Plant**

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TM #10

TM Title

TM Status

Toxicity Assessment

When preparation is concluded or is estimated to be concluded: 24 Aug 93

Projected date of submittal to EPA/CDH: Unknown due to work stoppage

Actual date of submittal:

Date when comments are received:

**Planned Work for January**

- Continue Soil Vapor Extraction.
- Continue FS.
- Continue Surface Water IM/IRA.
- Continue RI Report.

**Problems**

None

**Open Items**

The regulatory agencies are working to arrive at a compromise approach to the HHRA work stop order issue of data aggregation.

**2.2.2 OU 2 REMEDIATION****Scope of Work Changes This Period**

None

**Technical Approach Changes This Period**

None

**IAG Milestone Accomplishments**

Submit Draft Proposed IM/IRA Decision Document	19 Jun 90
Submit Proposed Plan IM/IRA Decision Document	18 Sep 90
Submit Draft Responsiveness Summary	13 Dec 90
Submit Final Responsiveness Summary and Final IM/IRA Decision Document	11 Jan 91
Field Treatability Test System Installation Complete	10 May 91
Begin Field Treatability Testing (Carbon System)	03 May 91
Submit Draft Treatability Test Report (Phase I GAC)	01 Apr 92
Complete IM/IRA Construction (radionuclides removal system)	24 Apr 92

	<i>Project Status</i>
Begin Field Treatability Testing (radionuclides removal system)	27 Apr 92
Submit Final Treatability Test Report (Phase I GAC)	02 Jun 92
Submit Subsurface Site I Draft Test Plan	29 Oct 92
Submit Subsurface Site I Final Test Plan	12 Jan 93
Submit Subsurface Site 2 Draft Test Report	24 Jun 93
Submit Draft Surface Water Field Treatability Report	13 Jul 93

#### **Future IAG Milestones Through FY95**

<u>IAG Date</u> <u>Milestone Name</u>	<u>Extension</u> <u>Scheduled</u>	<u>Planned</u> <u>Accomplishment</u> <u>Status</u>	<u>Date</u>
Submit Final Phase II Treatability Study Report	13 Jul 93	8 Sep 93	8 Sep 93

#### **December Work Activity Status**

**Subsurface Interim Measure/Interim Remedial Action (IM/IRA)** - The Field Report for the OU 2 Detailed Soil Vapor Survey Data was completed and is being reviewed. The Draft of the report will be submitted by February 14, 1994.

**Field Treatment Unit (FTU) Surface Water Treatment Facility** - All of the data was provided to the DOE concerning the additional samples at Surface Water Station SW-132. Comments were received from the regulatory agencies for the Draft Surface Water IM/IRA Treatability Study Report (TSR) on December 10, 1993. The Final report will be delivered in approximately 6 weeks.

Twelve 55-gallon drums of sludge from the FTU were packaged this month.

Installation of permanent plant power continues to be an urgent item for the OU 2 FTU. Without permanent power, the FTU will continue to experience shutdowns caused from generator failure. The engineering package for construction is complete.

With the approval of the Scientific Notebook, a simple modification was made to the FTU to help significantly

reduce the waste that is generated (as sludge). This modification was implemented on December 21, 1993.

Modifications to the Sampling and Analysis Plan (SAP) for the OU 2 FTU continue. The changes to the SAP will allow the sampling at the FTU to be more characteristic of the treatment facilities effectiveness, as well as more cost effective.

On December 15, 1993, a membrane ruptured on the microfiltration unit. No release occurred, as the membranes are contained within a 6" permeate pipe. Lockout/Tagout was implemented, and the membrane was replaced without any complications. Surface water collection was never interrupted during the repairs.

The lead granular activated carbon unit was replaced on December 11, 1993. This carbon unit was the first unit to be replaced based on analytical results that monitored for breakthrough of the carbon. Previous carbon changeouts were performed every 120 days. This unit was placed into service on May 21, 1993, for a total run time of 205 days. Monitoring for breakthrough ensures that the carbon is fully utilized, resulting in less carbon replacement and waste disposal costs.

Treated surface water this month: 520,635 gallons  
Total treated water: 19,866,815 gallons

**Planned Work for January**     Subsurface IRA Program

- Continue work on the SVE Test 1.

Surface IRA Program

- Continue work on the sampling plan.
- Continue treating water at the OU 2 FTU.
- Continue sludge reduction efforts at the OU 2 FTU.

**Problems**

The FTU continues to operate intermittently.

**Open Items**

The Final SW IM/IRA TSR is pending completion until comments are received.



### 2.3 OU 3 OFFSITE AREAS

OU 3 can be divided into two categories based on two main activities. The IAG directs activities according to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This involves assessment of contamination in offsite areas also referred to as Contamination of the Land Surface (IHSS 199), Great Western Reservoir (IHSS 200), Standley Lake (IHSS 201), and Mower Reservoir (IHSS 202). The second category responds to a 1985 out-of-court lawsuit settlement, McKay vs. U.S., which directed that the surface soil contamination be remediated. Remedial activities in compliance with the Settlement Agreement (deep disc plowing) began in 1985. The disturbance resulting from remediation is being revegetated with mediocre success. The overall schedule for this activity is determined by the year-to-year success of the revegetation effort and requirements of the landowners.

**Scope of Work Changes  
This Period**                      None

**Technical Approach  
Changes This Period**                      None

<b>IAG Milestone Accomplishments</b>	Submit Draft Past Remedy Report	26 Oct 90
	Submit Draft Historical Information/ Preliminary Health Risk Assessment Report	09 Nov 90
	Submit Final Past Remedy Report	02 Apr 91
	Submit Final Historical Information/ Preliminary Health Risk Assessment Report	16 Apr 91
	Submit Draft Phase I RFI/RI Work Plan	10 Jul 91
	Submit Final Phase I RFI/RI Work Plan	06 Dec 91

#### **Future IAG Milestones Through FY95**

<u>IAG Date</u> <u>Milestone Name</u>	<u>Extension</u> <u>Scheduled</u>	<u>Planned</u> <u>Accomplishment</u> <u>Status</u>	<u>Date</u>
Submit Draft Phase I RFI/RI Report	16 Jul 93	14 Feb 94	14 Feb 94*
Submit Final Phase I RFI/RI Report	13 Dec 93	21 Oct 94	21 Oct 94*

\*TBD due to HHRA issue work stoppage.

## **DOE, Rocky Flats Plant**

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### **December Work Activity Status**

A meeting was held with the subcontractor who will be performing Phase II of the "State of Colorado's Health Studies on Rocky Flats." Phase I of this report was submitted to the Health Advisory Panel, and it indicated community exposure from RFP is minimal. Phase II of this report will focus on dose reconstruction. The purpose of the meeting was to determine if there are any common data needs or if data sharing would be beneficial. It was determined that the RI report will be submitted long before the CDH Phase II report is completed and there will be little opportunity to gain benefit from that report.

DOE attended a meeting with EG&G on December 3, 1993, where EG&G presented the FS planning strategy. Following this presentation, a series of working meetings will be proposed with the agencies to develop an FS Planning Agreement. The FS is a new phase of the regulatory process that OUs 1, 2, 3, and 6 are just beginning.

The OU 3 work stoppage continues on issues related to the baseline risk assessment. A DOE proposal on methodology to aggregate data was developed. A meeting was held on December 23, 1993, to discuss the EPA and DOE Proposals.

### **Technical Memoranda**

#### **Project**

TM #1  
TM Title  
TM Status

#### **OU 3-Offsite Areas**

Field Changes to RFI/RI Work Plan  
When preparation is concluded or is estimated to be concluded: 10 May 93  
Projected date of submittal to EPA/CDH: 10 May 93  
Actual date of submittal: 23 Apr 93

TM #2  
TM Title  
TM Status

Exposure Scenarios for the HHRA  
When preparation is concluded or is estimated to be concluded: 12 May 93  
Projected date of submittal to EPA/CDH: 12 May 93  
Actual date of submittal : 03 May 93  
Date when comments were received: 15 Jul 93

TM #3  
TM Title  
TM Status

Modeling  
When preparation is concluded or is estimated to be concluded: 29 Sep 93  
Projected date of submittal to EPA/CDH: TBD  
Actual date of submittal : N/A  
Date when comments were received: N/A

TM #4  
TM Title  
TM Status

Contaminants of Concern (currently under a work  
stoppage)  
When preparation is concluded or is estimated to be concluded: 18 Oct 93  
Projected date of submittal to EPA/CDH: TBD  
Actual date of submittal : N/A  
Date when comments were received: N/A  
Currently under a work stoppage

**Planned Work for January**

- Begin scoping of OU 3 FS.

**Problems**

None

**Open Items**

The regulatory agencies are working to arrive at a compromise approach to the HHRA work stop order issue of data aggregation.



## **2.4 OU 4 - SOLAR EVAPORATION PONDS**

OU 4 is comprised of five solar evaporation ponds: 207A, 207B series (north, center, south), and 207C, which were constructed for treatment and storage of process water from industrial operations. The process water contained treated acidic wastes, industrial liquid wastes (e.g., metal plating solutions), and low-level radioactive wastes.

As technology improved through the early 1960s and 1970s, the ponds were relined with various upgraded materials. However, leakage from the ponds into the soil and ground water was detected. Interceptor trenches were installed in 1971 to collect and recycle contaminated ground water to the ponds and to minimize natural seepage and pond leakage from entering North Walnut Creek. In 1981, these trenches were replaced by the current, larger interceptor trench system (ITS), which returned approximately 4 million gallons of ground water back into the solar evaporation ponds each year.

No additional process water has been pumped into the ponds since 1986. However, the ITS collected and returned ground water into the solar evaporation ponds until new storage tanks were completed and placed in operation in April 1993. The tanks allowed the RFP to stop placement of contaminated ground water into the ponds. This placement of water into the ponds had been occurring without meeting Land Disposal Restrictions and Minimum Technology Requirements of Resource Conservation and Recovery Act (RCRA). A new, dedicated Building 910 evaporation-treatment facility became operational in July 1993. This building supplements the plant's waste treatment facility in Building 374 to process the water stored in the modular tanks. As various upgrades are installed in Building 374 and as other plant waste streams decrease in volume, ITS water will be preferentially treated in Building 374 rather than Building 910.

The Solar Evaporation Ponds Subproject has been comprised of four technical areas: (1) pond sludge processing by means of the Agreement in Principle between DOE and CDH; (2) a water management/treatment by means of the IMIRA DD signed by EPA, CDH and DOE; (3) the OU 4 assessment and remedial action, per the IAG which identified the ponds as one of the sixteen OUs to be remediated at the RFP and superseded the 1988 Ponds-Closure Plan submitted by DOE to the regulators; and (4) pad operations and storage activities that are necessary to meet the plant's RCRA interim status and permit requirements with regards to storage of pond wastes. The water management and pond sludge clean-out are necessary precursors to OU 4 assessment and remediation, and pad operations are necessary support activities at least until the pond sludge waste is disposed. Revisions to scope in these areas are being implemented in accordance with the recent dispute resolution for OU 4.

Work in these four areas was planned to close the ponds and remediate OU 4. The work was scoped to (1) remove water from the ponds, (2) provide a treatment facility to replace the ponds as evaporation-treatment and storage units for pond-related contaminated ground water, (3) remove and dispose of pond sludge in compliance with all regulations such as the Land Disposal Restrictions of RCRA, (4) assess the nature and extent of contamination at the ponds; (5) complete a RCRA closure of the impoundments; and (6) remediate the ponds as needed.

**2.4.1 OU 4 ASSESSMENT**

**Scope of Work Changes  
This Period**

Project Work Plan revisions have begun to incorporate the results of the OU 4 dispute resolution, as outlined in the future milestone section. Budget changes to implement the revised scope were submitted to DOE/HQ. While awaiting DOE/Headquarter's (HQ) approval, DOE/RFO is proceeding with the scope funding under these changes

**Technical Approach  
Changes This Period**

None

**IAG Milestone  
Accomplishments**

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	26 Nov 90

**Future IAG Milestones  
Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status*</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	21 May 93	Deleted	Deleted
Submit Final Phase I RFI/RI Report	18 Oct 93	Deleted	Deleted
Submit Draft Phase II RFI/RI Work Plan	22 Apr 94		13 Apr 94
Submit Final Phase II RFI/RI Work Plan	19 Sep 94		02 Jun 94

\* Established revised dates in dispute resolution.

**December Work Activity  
Status**

**Phase I Interim Measures/Interim Remedial Action Plan (IM/IRA) Program** - Phase I RFI/RI data analysis for IM/IRA report development continues and is currently on schedule. In support of development of the report, data received from the RFI/RI field activities and the historical data are being evaluated.

The regulatory agencies and DOE agreed upon the "remedial alternative" for the Phase I IM/IRA Program. The selected alternative includes an engineering barrier for closing the Solar Evaporation Ponds (SEP), removing limited contaminated soil from the North Hillside and placing the soil media into a selected SEP impoundment, and remediating any potential "hotspots." Development of a conceptual design for the engineering barrier will start immediately.

DOE and EG&G personnel visited the Hanford Site on December 7 and 8, 1993, to evaluate the Hanford Site

Permanent Isolation Surface Barrier Development Program. The program was tasked with the development of an isolation barrier capable of the following preliminary performance objectives: function in a semiarid-to-subhumid environment, and limit the recharge of water through the waste to the water table near zero amounts. A prototype of the isolation barrier is scheduled to construct overlying waste cribs in the spring of 1994. The barrier may have applications to accommodate water for in-place closures at RFP. A trip report was distributed at the December 21, 1993, weekly meeting with the regulators.

A technical evaluation was transmitted to RFP Procurement on December 10, 1993, for the OU 4 revised IM/IRA "streamline" program. The modification under evaluation is necessary to implement the OU 4 dispute resolution and is expected to be awarded on schedule.

Phase I RFI/RI activities (report development, data analysis, core logging, etc.) continue and are currently on or ahead of schedule. Demobilization of the drilling contractor was completed on December 10, 1993, for the 207-B pond activities, and 207-C pond drilling is planned for May 1994. Core logging was initiated December 13, 1993, from the geologic cores collected from Pond 207 B North and Center.

**DOE, Rocky Flats Plant**

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**Project**

**OU 4-Solar Evaporation Ponds**

TM #1

TM Title

TM Status

Vadose Zone Investigation

Draft submitted to EPA/CDH: 16 Nov 92

Comments received: 30 Nov 92

Conditional Approval: 30 Nov 92

Projected submittal of Final to EPA/CDH: 15 Dec 92

Actual submittal date of Final: 15 Dec 92

Submittal of TM 1 Vadose Zone Schedule: 19 May 93

EPA/CDH Final Approval of TM 1: 17 Jun 93

TM #2

TM Title

TM Status

Modification to Field Activities

Draft submitted to EPA/CDH: 18 Mar 93

Comments received: 07 May 93

Projected submittal of Final to EPA/CDH: 07 Jun 93

Actual submittal date of Final: 09 Jun 93

EPA/CDH Final Approval of TM 2: 30 Jun 93

TM #3

TM Title

TM Status

Environmental Evaluation

Draft submitted to EPA/CDH: 19 Mar 93

Comments received: EPA 21 Apr 93

CDH 02 Jun 93

Projected submittal of Final to EPA/CDH: 30 Apr 93

Actual submittal date of Final: 02 Jul 93

EPA/CDH Final Approval of TM 3: 30 Jul 93

TM #4

TM Title

TM Status

Human Health Risk Assessment Exposure Scenarios

Draft submitted to EPA/CDH: 19 Mar 93

Comments received: EPA 21 Apr 93, CDH 23 Apr 93

Projected submittal of Final to EPA/CDH: 11 Jun 93

Actual submittal date of Final: 11 Jun 93

EPA/CDH Final Approval of TM 4: 25 Jun 93

TM #5

TM Title

TM Status

Exposure Models

Projected submittal of Draft to EPA/CDH: 01 Aug 93

Actual submittal of Draft : 24 Jun 93

Projected submittal of Final to EPA/CDH: 15 Oct 93

Received stop work order: 24 Aug 93

TM #6

TM Title

TM Status

Contaminants of Concern

Projected submittal of Draft to EPA/CDH: 09 Nov 93

Projected submittal of Final to EPA/CDH: 22 Dec 93

Received stop work order: 24 Aug 93



TM #7  
TM Title  
TM Status

Toxicity Assessment  
Projected submittal of Draft to EPA/CDH: 04 Nov 93  
Projected submittal of Final to EPA/CDH: 22 Dec 93  
Received stop work order: 24 Aug 93

**Planned Work for January** Continue validation of data from drilling samples and vadose zone samples.

**Problems** None

**Open Items** Investigation of the floors of Ponds 207C and 207B South remains to be completed. The field work will be performed in April and May 1994.

## **2.4.2 OU 4 REMEDIATION**

**Scope of Work Changes This Period** None

**Technical Approach Changes This Period** None

**IAG Milestone Accomplishments** None. The first IAG remediation milestone for this OU is the Draft Phase I Proposed IM/IRA DD scheduled for April 14, 1994.

### **Future IAG Milestones Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status*</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I Proposed IM/IRA Decision Document	14 Apr 94	No change	13 Apr 94
Submit Final Phase I Proposed IM/IRA Decision Document	12 Sep 94	24 Jun 94	02 Jun 94
All Solar Ponds Emptied of Water and Sludge	new	20 Jan 95	31 Mar 94

\* Established revised dates in dispute resolution; schedule accelerated.

**December Work Activity Status** **Regulatory** - DOE submitted a request to CDH for a change to RCRA Interim Status to allow Solar Pond sludge to be stored in tanks on the 750 Pad. CDH requested additional information and DOE submitted an 89-page response to CDH on December 14, 1993.

Approval was received December 22, 1993, and DOE is reviewing the conditions attached by CDH.

CDH approval is needed to store drill cuttings that were generated by field investigation work in the 207-B ponds. The drill cuttings are currently stored in a RCRA 90-day area, but must be moved to a storage unit before the 90 days expire. DOE requested a change to Interim Status, which is needed to provide for storage of the drill cuttings. No problem with obtaining approval was identified so far. The 90-day storage limit expires in February 1994.

**Pondsludge Status and Issues** - Deliveries of high-density polyethylene tanks continue. To date, six tank sets ( a set includes an inner tank and a secondary containment tank.) were received and five were installed in Tent 3. The sixth tank set remains in the receiving area awaiting repairs by the tank vendor. Tank deliveries are scheduled to continue at a rate of eight tank sets per week through January 1994. The Heater/Soaker modifications and all preparations for the initial tank receipt were completed. All the vacuum truck services personnel completed all training for B Pond operations. Training for C Pond operations were also completed.

All DOE Engineering and Technology activities necessary to begin vacuum trucking operations are complete. All similar construction activities are complete except for some floor patching in Tent 4 and tank vent installation. The new procedures to startup are complete and are undergoing nuclear safety screens. The Special Assessment Checklist was approved December 23, 1993.

RFP Facility Safety Engineering completed the Basis for Interim Operations (BIO) for the Sludge removal from the 207 B Pond. The document was received by DOE for approval on December 16, 1993. The BIO for the movement of the 207 C Pond sludge and the clarifier was completed in December 1993.

**Water Management Status and Issues** - There are some continuing conductivity probe problems in Building 910. Because of the conductivity probe problems and a 17 item maintenance list, building operations will be stopped until all items are repaired. The rainwater collected in the empty ponds is being classified as "not a waste" ; however, it may not be able to dispose of it as incidental water. The analysis of the water indicates elevated levels of cadmium and aluminum that are well above stream

standards. The most probable solution to this problem is to allow the water to evaporate from the pond.

The Building 910 operations plan is in waste operations for review and concurrence. There is some objection to the wording of the processing priority statements and these differences will need to be resolved.

The requirement for weekly sampling of the Building 910 evaporator product water is set forth in the IM/IRA; however, relief from this requirement is going to be requested on the basis of it providing redundant data. The plan is to collect analytical data for a period of several months to provide objective backup for this position. The current problem is the backlog in the Building 881 analytical laboratory where the samples are processed. To date, no data has been received on these samples.

**Planned Work for January**

- Sludge from Pond 207 B will be transferred to storage on 750 Pad.
- DOE's NEPA determination for the pond closure will be received.
- Work on the conceptual design and other IM/IRA Decision Document components for pond closure will continue.

**Problems**

- Delays in obtaining CDHs approval for sludge storage has delayed emptying Pond 207 B.

**Open Items**

A more thorough understanding of the conditions attached to the CDH approval for storage of the sludge on the 750 Pad is needed to ensure the planned implementation will meet CDH needs. Meetings are being planned to address the conditions.



**2.5 OU 5 - WOMAN CREEK**

This activity encompasses assessment and remediation of 10 IHSSs in the Woman Creek drainage: Original Landfill (IHSS 115); Ash Pits (IHSS 133.1 - 133.4); Incinerator (IHSS 133.5); Concrete Wash Pad (IHSS 133.6); Detention Ponds C-1 and C-2 (IHSS 142.10 and 142.11); Surface Disturbance (IHSS 209), southeast of Building 881. Two additional surface disturbances have been identified and are located, one south of the Ash Pits and a second west of IHSS 209. These last two sites have been included in the OU 5 Work Plan.

Possible contamination in this operable unit was caused by landfill operations, storm-water runoff into holding ponds, and ash-pit operations. Constituents in OU 5 are believed to include nitrates, depleted uranium, metals, beryllium, solvents, pesticides, oils, paints, and cleaners. Media affected include soils, sediments, surface water, ground water, and air resuspension.

**Scope of Work Changes  
This Period**                      None

**Technical Approach  
Changes This Period**                      None

<b>IAG Milestone Accomplishments</b>	Submit Draft Phase I RFI/RI Work Plan	05 Apr 91
	Submit Final Phase I RFI/RI Work Plan	30 Aug 91

**Future IAG Milestones  
Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	30 Nov 93		09 Feb 95*
Submit Final Phase I RFI/RI Report	03 May 94		18 Oct 95*

\* Completion date to be rescheduled due to HHRA issues work stoppage.

**December Work Activity  
Status**

The comments/response sheets responding to the EPA and CDH comments on draft TM #12, *Exposure Scenarios*, are in review and will be held until the stop work order has been rescinded.

The draft TM #13, *Modeling*, is being reviewed by the regulatory agency and should return from the regulators in January 1994.

Work is progressing on the geology and hydrology and the nature and extent sections of the Draft Phase I RFI/RI Report.

Approximately 80 percent of the analytical data is in the Rocky Flats Environmental Database Systems (RFEDS), with approximately 50 percent validated.

There has not been a resolution to the HHRA stop work order on data aggregation, selection of contaminants and statistical comparisons.

**Technical Memoranda**

**Project**

**OU 5-Woman Creek Priority Drainage Remedial Investigation**

TM #1

TM Title

TM Status

Surface Water and Sediments

When preparation is concluded or is estimated to be concluded: 30 Nov 92

Projected date of submittal to EPA/CDH: 30 Nov 92

Actual date of submittal: 13 Oct 92

TM #2

TM Title

TM Status

Surface Geophysics

When preparation is concluded or is estimated to be concluded: 30 Nov 92

Projected date of submittal to EPA/CDH: 30 Nov 92

Actual date of submittal: 13 Oct 92

TM #3

TM Title

TM Status

Soil Sampling at IHSS 115

When preparation is concluded or is estimated to be concluded: 07 May 93

Projected date of submittal to EPA/CDH: 07 May 93

Actual date of submittal: 26 Jan 93

TM #4

TM Title

TM Status

Soil Sampling at IHSS 133

When preparation is concluded or is estimated to be concluded: 07 Jun 93

Projected date of submittal to EPA/CDH: 07 Jun 93

Actual date of submittal: 12 Apr 93

TM #5

TM Title

TM Status

Soil Gas Sampling at IHSS 115

When preparation is concluded or is estimated to be concluded: 07 May 93

Projected date of submittal to EPA/CDH: 07 May 93

Actual date of submittal: 25 Mar 93

TM #6	Cone Penetrometer at IHSS 115
TM Title	When preparation is concluded or is estimated to be
TM Status	concluded: 14 Apr 93
	Projected date of submittal to EPA/CDH: 14 Apr 93
	Actual date of submittal: 25 Mar 93
TM #7	Soil Borings at IHSS 133
TM Title	When preparation is concluded or is estimated to be
TM Status	concluded: 07 May 93
	Projected date of submittal to EPA/CDH: 07 May 93
	Actual date of submittal: 19 Feb 93
TM #8	Monitoring Wells at IHSS 115
TM Title	TM 8, has been canceled, and has been replaced by a
TM Status	letter outlining the justification behind the location of the
	wells in IHSS 115
TM #9	Monitoring Wells at IHSS 133, Ash Pits, Incinerator and
TM Title	Concrete Wash Pad
TM Status	When preparation is concluded or is estimated to be
	concluded: 14 May 93
	Projected date of submittal to EPA/CDH: 06 May 93
	Actual date of submittal: 06 May 93
	EPA/CDH comments scheduled: 11 Jun 93
	Actual date of submittal: 28 Jun 93
TM #10	Soil Borings at IHSS 209
TM Title	When preparation is concluded or is estimated to be
TM Status	concluded: 06 Mar 93
	Projected date of submittal to EPA/CDH: 06 Mar 93
	Actual date of submittal: 06 Mar 93
TM #11	Contaminants of Concern
TM Title	To be scheduled in FY94
TM #12	Exposure Scenarios
TM Title	When preparation is concluded or is estimated to be
TM Status	concluded: 24 Nov 93
	Projected date of submittal to EPA/CDH: 24 Nov 93
	Actual date of submittal: N/A

**DOE, Rocky Flats Plant**

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TM #13

TM Title

TM Status

Modeling

When preparation is concluded or is estimated to be concluded: 12 Jan 94

Projected date of submittal to EPA/CDH: 12 Jan 94

Actual date of submittal: N/A

TM #14

TM Title

TM Status

Toxicity Assessment

To be scheduled in FY94

**Planned Work for  
January**

- Continue to organize, clean up, and manage the OU 5 unvalidated analytical database.

**Problems**

The HHRA stop work order has resulted in a 50 percent reduction in the work being completed and continues to have a major impact on the project schedule.

**Open Items**

The regulatory agencies are working to arrive at a compromise approach to the HHRA work stop order issue of data aggregation.



**2.6 OU 6 - WALNUT CREEK**

This activity encompasses assessment and remediation in the Walnut Creek Drainage of 21 IHSSs: A-series Detention Ponds, Ponds A-1 through A-4 (IHSS 142.1 through 142.4 and 142.12); the B-series Detention Ponds, Ponds B-1 through B-5 (IHSS 142.5 through 142.9); the North, Pond, and South Area Spray Fields (IHSS 167.1, 167.2 and 167.3); the East Area Spray Field (IHSS 216.1), the Trenches A, B and C (IHSS 166.1, 166.2 and 166.3); the Sludge Dispersal Area (IHSS 141); the Triangle Area (IHSS 165); the Old Outfall Area (IHSS 143). and the Soil Dump Area (IHSS 156.2).

Completion of field operations resulted in obtaining the following samples from the IHSSs in OU 6: stream sediment, pond sediment, surface soil, subsurface soil, surface and ground water.

Eleven new ground water monitoring wells, installed in OU 6 to supplement five existing wells, are being sampled each quarter for a minimum of 1 year. Geophysical surveys and radiation surveys were performed in selected areas to supplement the sampling activities.

The regulatory agencies have proposed a new IM/IRA on the operation of the RFP Ponds. If approved, this IM/IRA would affect the RFP pond water management, including OU 6, placing the water under CERCLA rather than the National Pollution Discharge Elimination System (NPDES).

**Scope of Work Changes This Period**      None

**Technical Approach Changes This Period**      None

<b>IAG Milestone Accomplishments</b>	Submit Draft Phase I RFI/RI Work Plan	19 Apr 91
	Submit Final Phase I RFI/RI Work Plan	16 Sep 91

**Future IAG Milestones Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	04 Aug 93	10 Jun 94	21 Oct 94*
Submit Final Phase I RFI/RI Report	07 Jan 94	18 Nov 94	10 Jul 95*

\* Completion date to be rescheduled due to HHRA issues work stoppage.

**December Work Activity Status**      The comment/response sheets for TM #3, *Modeling Surface and Ground Water*, responding to the EPA and CDH comments are still in review with the regulatory agencies. The CDH had one comment on the modeling

TM and that comment was addressed and the response was delivered to CDH on December 22, 1993. Once the regulatory agencies have approved the remaining response, the final TM will be produced.

Work is progressing on the geology and hydrology and the nature and extent sections of the Draft Phase I RFI/RI Report.

The analytical database is complete (99 percent), and approximately 85 percent validated. The subcontractor is involved with database management and clean up, preliminary histograms were produced (with aggregated data for the entire OU) for CLP metals.

There has not been a resolution to the HHRA stop work order on data aggregation, selection of contaminants and statistical comparisons.

**Technical Memoranda**

**Project**

**OU 6-Walnut Creek**

TM #1  
TM Title  
TM Status

Work Plan Modifications  
Approved by EPA: 08 Jan 93

TM #2  
TM Title  
TM Status

Exposure Scenarios  
When preparation is concluded or estimated to be concluded: 01 Feb 94  
Projected date of submittal to EPA/CDH: 15 Feb 94  
Actual date of submittal: TBD  
Date when EPA/CDH comments received: N/A

TM #3  
TM Title  
TM Status

Modeling Surface and Ground Water  
When preparation is concluded or is estimated to be concluded: 21 Jan 94  
Projected date of submittal to EPA/CDH: 26 Jan 94  
Actual date of submittal: TBD  
Date when EPA/CDH comments received: N/A

TM #4  
TM Title  
TM Status

Contaminants of Concern  
When preparation is concluded or is estimated to be concluded: 15 Mar 94  
Projected date of submittal to EPA/CDH: 30 Mar 94

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**Project Status**

✓ Actual date of submittal: N/A  
Date when EPA/CDH comments received: N/A

TM #5  
TM Title  
TM Status

Toxicity Factors  
When preparation is concluded or is estimated to be  
concluded: 15 Mar 94  
Projected date of submittal to EPA/CDH: 30 Mar 94  
Actual date of submittal: N/A  
Date when EPA/CDH comments received: N/A

**Planned Work for January**

- Continue finalization of TMs #2 and #3.
- Clean up and manage analytical database.

**Problems**

Stop work order has prevented continued work to be  
accomplished on the TM #4, COC, and delayed  
TM #2, *Exposure Scenarios*, and TM #3, *Modeling*.

**Open Items**

The regulatory agencies are working to arrive at a  
compromise approach to the HHRA work stop order  
issue of data aggregation.



**2.7 OU 7 - PRESENT LANDFILL**

The Present Landfill - OU 7 is located north of the plant complex on the western edge of an unnamed tributary of North Walnut Creek and is comprised of two IHSSs. IHSS 114 includes landfill waste and leachate at the Present Landfill, soils beneath the landfill potentially contaminated with leachate, and sediments and water in the East Landfill Pond. IHSS 203 contains potentially contaminated soils at the Inactive Hazardous Waste Storage Area. A section of the Present Landfill located in the southwest corner was used between 1986 and 1987 as a temporary storage area for hazardous waste. The Present Landfill began operation in August of 1968 and was originally constructed to provide for disposal of RFP's nonradioactive and nonhazardous wastes. In September 1973, tritium was detected in leachate from the landfill. During the mid-1980s, extensive investigations were conducted on the waste streams (types) placed into the landfill; consequently, hazardous wastes/hazardous constituents were identified. Although currently operating as a nonhazardous sanitary landfill, the facility is considered an inactive hazardous waste disposal unit undergoing RCRA closure.

**Scope of Work Changes This Period**      None

**Technical Approach Changes This Period**      None

<b>IAG Milestone Accomplishments</b>	Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
	Submit Final Phase I RFI/RI Work Plan	28 Aug 91

**Future IAG Milestones Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	12 Oct 93		20 Dec 93*
Submit Final Phase I RFI/RI Report	16 Mar 94		02 Sep 94*
Submit Draft Phase II RFI/RI Work Plan	13 Sep 94		07 Aug 95*
Submit Draft Phase I Proposed IM/IRA DD	01 Nov 94		14 Feb 97*
Submit Final Phase II RFI/RI Work Plan	15 Feb 95		15 Apr 96*
Submit Final Phase I Proposed IM/IRA DD	06 Apr 95		16 Oct 97*
Submit IM/IRA Responsiveness Summary	14 Aug 95		14 May 98*

\* Completion date to be rescheduled due to HHRA issues work stoppage.

**December Work Activity Status**

Work continues on a technical evaluation of the subcontract modification proposal for implementing the proposed integration of Phase I and II field activities as well as commencement of the IM/IRA process.

Work continues on refining a strategy to assess risk at the landfill. A draft framework document was completed to form a baseline strategy and will be transmitted to the

regulatory agencies. CDH and EPA agreed to the concept of breaking up OU 7 into three components: the Present Landfill (PLF), East Landfill Pond (ELP), and surrounding surface and subsurface soils, and the ground water. Risk for these components will be assessed as follows:

1. PLF risk will be assessed at a summary level for direct ingestion/residential only as the bounding scenario.
2. ELP and soils will be risk based.
3. Ground water will be addressed through applicable relevant and appropriate requirements (ARARs) comparison providing ARARs demonstrate protectiveness.

A technical working group met on December 7, 1993, to assess what direction this effort should take and to redefine data quality objectives (DQOs) for OU 7. Preliminary DQOs were determined and will be distributed to a DQO development team for review prior to finalization. DOE received this draft for review in December 1993 prior to transmittal to CDH and EPA in January 1994.

#### Technical Memoranda

##### Project

TM #1  
Title  
Status

##### OU 7 - Present Landfill

###### Exposure Scenarios

Initial reviews completed by DOE/HQ and DOE. Review completed by EPA and CDH. Response summary developed and submitted to all parties for review. Reviews complete. Revised response summary completed 25 May 93, with a final review under way prior to transmittal to the agencies.

TM #2  
TM Title  
TM Status

###### Model Description.

Transmitted to EPA and CDH for review: 08 Jan 93  
Initial review by EPA, CDH, and DOE completed:  
30 April 93  
Draft response summary complete: 25 May 93

**TM #3****TM Title**

Addendum to Final Phase I RFI/RI Work Plan. Surface Soil and Asbestos Pit Disposal Area Characterization Plan.

**TM Status**

Transmitted to DOE for review: 05 Feb 93

Transmitted to the EPA and CDH for review: 08 Feb 93

Comments received: 26 Apr 93

Conditional approval by the EPA and CDH received: 22 Feb 93

Clarification of outstanding comments from EPA and CDH received: 03 May 93

**TM #4****TM Title**

Contaminants of Concern

**TM Status**

Under development

**Planned Work for January**

- Continue to finalize the rescoping for OU 7.
- Award IM/IRA subcontract modification.
- Rebaseline Five-Year Plan (FYP) per recent negotiations with CDH and EPA.
- Finalize DQOs for OU 7.

**Problems**

An approved data aggregation methodology has not been finalized. Draft DOE proposals for data aggregation indicate potential cost and schedule impacts exist because of multiple risks assessments. The total number of risk assessments required for each OU will be negotiated with the regulatory agencies and based upon data aggregation criteria that may not be supported by current agency approved Work Plans.

**Open Items**

The regulatory agencies are working to arrive at a compromise approach to the HHRA work stop order issue of data aggregation and a methodology for comparisons of site specific data to background values.





## 2.8 OU 8 - 700 AREA

The 24 IHSSs that constitute OU 8 encompass separate sites inside and around the production area of the Rocky Flats Plant. Contamination sources within the various IHSSs include above ground and underground tanks, equipment washing areas, and releases inside buildings which potentially affected areas outside the buildings. Contaminants from these sources may have been introduced into the environment through spills on the ground surface, underground leakage and infiltration, and in some cases through precipitation runoff. The chemical composition of the contaminants also varies widely between the IHSSs, ranging from low-level radioactive mixed wastes to nonradioactive organic and inorganic compounds.

OU 8 is within the Industrial Area (IA ) at the Rocky Flats Plant and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these IA OUs are being investigated together because of similar field investigation techniques: e.g., surface soil sampling, radiation survey, etc. The main benefit from managing the IA OUs is improved oversight, coordination, and reduced costs.

**Scope of Work Changes  
This Period**                      None

**Technical Approach  
Changes This Period**                      None

<b>IAG Milestone</b>	Submit Draft Phase I RFI/RI Work Plan	01 May 92
<b>Accomplishments</b>	Submit Final Phase I RFI/RI Work Plan	01 Dec 92

### **Future IAG Milestones Through FY95**

<b>Milestone Name</b>	<b><u>IAG Date Scheduled</u></b>	<b><u>Extension Status</u></b>	<b><u>Planned Accomplishment Date</u></b>
Submit Draft Phase I RFI/RI Report	14 Feb 94		02 Nov 15
Submit Final Phase I RFI/RI Report	12 Jul 94		19 Jul 16

<b>December Work Activity Status</b>	DOE received draft copies of all the Industrial Area Environmental Evaluation (IA EE) documents on December 15, 1993, for their review and comment. Copies of the Implementation Plan, Field Sampling Plan (FSP), Phase I Data Summary, Phase I Data Summary Addendum, Phase II Data Summary, Phase III Data Summary, and IA EE TM were included.
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**DOE, Rocky Flats Plant**

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DOE received the bird survey addendum and the Phase II Data Summary for review and comment on December 10, 1993.

**Technical Memoranda**

Preparation work on TM #1, *Footing/Under Drains Data Compilation*, started in September 1993. The draft TM will be issued in February 1994 after completion of data compilation.

**Planned Work for January**

- Complete the format resolution for the IA EE. Set up meetings with the regulatory agencies, DOE, and EG&G to present the findings of the IA EE field work.
- Continue work on TM #1.

**Problems**

None

**Open Items**

None

## 2.9 OU 9 - ORIGINAL PROCESS WASTE LINES

This activity involves characterizing a series of tanks and associated process waste lines. The original process waste lines (OPWL) consisted of 35,000 feet of buried pipeline that transferred process wastes from production buildings to onsite treatment plants. A system of 60 designated pipe section, 46 storage tank sites, and 3 other areas of suspected process waste leakage are included in OU 9. The system was placed into operation in 1952, and additions were made to the system through 1975. The original system was replaced over the 1975-1983 period by the new process waste system. Some tanks and lines from the original system were incorporated into either the new process waste system or the fire water deluge collection system.

The original system is known to have transported or stored various aqueous process wastes containing low-level radioactive materials, nitrates, caustics, and acids. Small quantities of other liquids were also introduced in the system, including medical decontamination fluids, miscellaneous laboratory liquids, and laundry effluent. The RFI/RI Phase I Work Plan includes inspection and sampling of the OPWL tanks and pipelines that are accessible and soil sampling to determine the extent of contamination in the vadose zone. The soil sampling will be performed by installing test pits and boring where known or suspected releases occurred, near pipe joints and valves, at approximately 200-foot intervals along the pipelines, and by installing borings around the outdoor tanks. Soil characterization studies will determine the need for soil removal and/or treatment. The results of the Phase I RFI/RI will determine the need for interim and/or final remediation action.

OU 9 is within the Industrial Area (IA ) at the Rocky Flats Plant and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these IA OUs are being investigated together because of similar field investigation techniques: e.g., surface soil sampling, radiation survey, etc. The main benefit from managing the IA OUs is improved oversight, coordination, and reduced costs.

**Scope of Work Changes  
This Period**                      None

**Technical Approach  
Changes This Period**                      None

<b>IAG Milestone</b>	Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
<b>Accomplishments</b>	Submit Final Phase I RFI/RI Work Plan	26 Nov 91

### **Future IAG Milestones Through FY95**

<b>Milestone Name</b>	<b><u>IAG Date</u> <u>Scheduled</u></b>	<b><u>Extension</u> <u>Status</u></b>	<b><u>Planned</u> <u>Accomplishment</u> <u>Date</u></b>
Submit Draft Phase I RFI/RI Report	11 Apr 94		04 Jan 01
Submit Final Phase I RFI/RI Report	06 Sep 94		16 Sep 03
Submit Draft Phase II RFI/RI Work Plan	10 Mar 95		23 Jul 04
Submit Draft Phase I Proposed IM/IRA DD	01 May 95		31 Oct 03
Submit Final Phase II RFI/RI Work Plan	07 Aug 95		01 Apr 05
Submit Final Phase I Proposed IM/IRA DD	27 Sep 95		12 Jul 04

**DOE, Rocky Flats Plant**

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**December Work Activity Status**

The preliminary draft Final OU 9 TM #1, *Field Sampling Plan Part I Outside Tanks*, was received by DOE on December 14, 1993. DOE's position on how to handle active tanks outside buildings is that they should not be included in this field sampling TM. The current TM recognizes that the tanks are under consideration but defers sampling activity until after the tank is taken out of use. Review by DOE is planned to occur before the TM is sent to the regulatory agencies in January 1994.

A Process Improvement Team (PIT) composed of DOE and EG&G personnel was established to develop a strategy to disposition all tanks at the RFP. A meeting was held on December 17, 1993, to discuss the review comments on the Tank Disposition PIT Final Report Draft. Comments were minimal and the Final Report was presented the week of December 20, 1993.

**Technical Memoranda**

**Project**

**OU 9-Original Process Waste Lines**

TM #1

TM Title

TM Status

Field Sampling Plan - OPWL - Volume I - Tanks  
When preparation is concluded or is estimated to be concluded: Jan 94  
Projected date of submittal to EPA/CDH: Jan 94  
Actual date of submittal: N/A  
Date when EPA/CDH comments received: N/A

**Planned Work for January**

- Continue work on TM #1. Incorporate comments, finalize, and submit to the agencies.

**Problems**

None

**Open Items**

None

**2.10 OU 10 - OTHER OUTSIDE CLOSURES**

OU 10 is made up of 15 IHSSs scattered throughout the plant, which consist of various hazardous waste units. Six of the IHSSs are located in the PA, two are located in the buffer zone near the present landfill, and the remaining IHSSs are located near various buildings throughout the plant. The types of wastes identified at these sites range from pondcrete/saltcrete storage and drum storage to a utilization yard with waste spills. A Final Phase I RFI/RI Work Plan is currently in preparation. The primary components of the RFI/RI Work Plan for OU 10 will be an FSP, Baseline Risk Assessment Plan (BRAP) and an EE Work Plan.

OU 10 is within the Industrial Area (IA ) at the Rocky Flats Plant and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these IA OUs are being investigated together because of similar field investigation techniques: e.g., surface soil sampling, radiation survey, etc. The main benefit from managing the IA OUs is improved oversight, coordination, and reduced costs.

**Scope of Work Changes This Period**      None

**Technical Approach Changes This Period**      None

<b>IAG Milestone Accomplishments</b>	Submit Draft Phase I RFI/RI Work Plan	27 Nov 91
	Submit Final Phase I RFI/RI Work Plan	01 May 92

**Future IAG Milestones Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	25 Aug 94		02 Nov 15
Submit Final Phase I RFI/RI Report	30 Jan 95		19 Jul 16
Submit Draft Phase I Proposed IM/IRA DD	26 May 95		26 Feb 18
Submit Draft Phase II RFI/RI Work Plan	27 Jun 95		25 May 17

**December Work Activity Status**      As determined by the RFP Operational Readiness Review (ORR), OU 10 was granted approval to begin nonintrusive field activities. Surficial soil sampling began in IHSS 170, OU 10, on December 10, 1993. Five samples per day were collected, and the sampling in the Property Utilization and Disposal (PU&D) Yard will be completed January 14, 1994. The next IHSS that will be sampled is IHSS 176 in OU 10 within the Protected Area (PA).

Surface soil disturbance permits are being completed for IHSS 176 and will be in place prior to field surface soil

sampling activities starting in IHSS 176. The requirements for surface soil disturbance permits are being reviewed and may be waived in the future for Environmental Restoration (ER) activities. New procedures that will include the new requirements for soil disturbance permits are being prepared.

The High Purity Germanium (HPGe) gamma survey system is up and running and all HPGe points were completed in December 1993.

Spectral data continues to be evaluated. Maps were developed, which depict relative concentrations for specific radionuclides for IHSSs in the IA. RFP received copies of all Phase I HPGe data after it was collected. Because of waste storage in certain IHSSs, portions of these IHSSs may have to be resurveyed because of materials blocking the field of view for the HPGe instrumentation.

**Industrial Area (IA) Individual Hazardous Substance Site (IHSS) Material Removal** - Additional barrels in the Property Utilization and Disposal (PU&D) yard (IHSS 170/174) were removed this month prior to implementing the Phase I surficial soil sampling. No drums or surplus materials are now present within the IHSS boundary. Management of the PU&D yard was turned over to RFP Environmental Restoration Management (ERM).

No decision has been made regarding FY94 responsibility for materials removal in the IA IHSS. DOE does not want ER monies to fund RFP Plant Services activities. Until this responsibility issue is resolved, no efforts will be made to begin work on removing all materials found in or around IHSS's 170/174 and 176. However, work will proceed in areas where material storage will not adversely affect data collection activities.

**Technical Memoranda**

No TMs have been developed for OU 10. The first TM for OU 10 will be for the nonintrusive field work, tentatively scheduled to be completed in March 1994.

**Planned Work for January**

- Begin surface soil sampling in IHSS 176.
- Continue spectral analysis of HPGe data.
- Collect additional HPGe data.

- Complete surficial soil sampling in IHSS 170/174 PU&D Yard.

**Problems**

Characterization and assessment of IHSSs in OUs 9, 10, and 15 represent significant problems until materials stored in the IHSSs are removed and the IHSSs can be assessed.

Efforts are still unresolved to either transfer IHSSs 213 (904 storage pad) and 214 (750 storage pad) to OU 4 or the RFP Permit modification.

**Open Items**

None





**2.11 OU 11 - WEST SPRAY FIELD**

The West Spray Field is located within the Rocky Flats Plant buffer zone immediately west of the plant security area. The West Spray Field was in operation from April 1982 to October 1985. During operation, excess liquids from solar evaporation ponds 207-B North and Center (contaminated ground water in the vicinity of the ponds and treated sanitary sewage effluent) were pumped periodically to the West Spray Field for spray application. The spray field boundary covers an area of approximately 105.1 acres, 38.3 of which received direct application of hazardous waste. The RFI/RI process will entail field studies to investigate the presence or absence of hazardous constituents in soil and ground water.

**Scope of Work Changes This Period**      None

**Technical Approach Changes This Period**      None

<b>IAG Milestone Accomplishments</b>	Submit Draft Phase I RFI/RI Work plan	08 Jun 90
	Submit Final Phase I RFI/RI Work plan	02 Jan 92

**Future IAG Milestones Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	20 Sep 94		18 Apr 95
Submit Final Phase I RFI/RI Report	22 Feb 95		03 Jan 96
Submit Draft Phase II RFI/RI Work Plan	21 Aug 95		25 Nov 96

**December Work Activity Status**

The TM #1, *Revised Field Sampling Plan (FSP) and Data Quality Objectives (DQO)*, is currently undergoing DOE/HQ review.

Proposals were received on December 16, 1993, from subcontractors bidding for the OU 11 RFI/RI investigation and report and are being evaluated.

Results from the supplemental statistical tests for comparison of COC to background data were completed on December 13, 1993, and are undergoing review and being summarized for inclusion as an appendix in the TM that revises the FSP for OU 11.

**DOE, Rocky Flats Plant**

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**Technical Memoranda**

**Project**

**OU 11 - West Spray Field**

TM #1

TM Title

TM Status

Revised Field Sampling Plan and Data Quality Objectives

Under development

HHRA Technical Memoranda is scheduled to begin in FY94

**Planned Work for January**

- Respond to DOE/HQ comments by January 14, 1994.
- Procure subcontract for RFI/RI field work and reporting.
- Receive and finalize the categorical exclusion (CX).
- Rewrite of DQOs for revised FSP to reflect recent changes on regulatory guidance.

**Problems**

A concern exists that the TM #1, *Revised FSP and DQO*, will not receive regulatory agencies' approval in time to meet the February 15, 1994, milestone to begin the field work.

**Open Items**

None

**2.12 OU 12 - 400/800 AREA**

The 400/800 Area involves assessment and remediation of the 10 IHSSs at the 400/800 Area: Multiple Solvent Spills at the West and South Loading Dock Areas (IHSSs 116.1 and 116.2); Fiberglassing Areas North and West of Building 664 (IHSSs 120.1 and 120.2); Cooling Tower Ponds - north, east, south, and west of Building 460 (IHSSs 136.1, and 136.2); Building 881 - Conversion Site(147.2); Radioactive Site - South Area (IHSS 157.2); Acid Leaks (2) (IHSS 187); and Multiple Acid Spills (IHSS 189).

Assessment will consist of preparing a Phase I RFI/RI Work Plan, which will include both an EE and a HHRA. After implementation of this Work Plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. A Phase II Investigation may be performed as necessary. An FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Remediation may consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a Record of Decision (ROD), release to the public, and implementation of the plan.

OU 12 is within the Industrial Area (IA ) at the Rocky Flats Plant and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these IA OUs are being investigated together because of similar field investigation techniques: e.g., surface soil sampling, radiation survey, etc. The main benefit from managing the IA OUs is improved oversight, coordination, and reduced costs.

**Scope of Work Changes This Period**      None

**Technical Approach Changes This Period**      None

<b>IAG Milestone Accomplishments</b>	Submit Draft Phase I RFI/RI Work plan	08 May 92
	Submit Final Phase I RFI/RI Work plan	05 Oct 92

**Future IAG Milestones Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	20 Apr 94		11 Mar 99
Submit Final Phase I RFI/RI Report	15 Sep 94		17 Nov 99

**DOE, Rocky Flats Plant**

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**December Work Activity Status**

According to the integrated approach to field work between the IA OUs, OU 12 surficial soil sampling is planned to begin after OU 10 is completed. Surficial soil sampling in OU 10 began on December 10, 1993. Soil Sampling in OU 12 is anticipated to begin in February 1994.

**Technical Memoranda**

The first TM scheduled for OU 12 is the nonintrusive TM due in April 1994.

**Planned Work for January**

- Initiate the Organizational Readiness Review for OU 12 field work.
- Initiate the soil disturbance permits for certain IHSSs within OU 12.

**Problems**

Similar to other IA OUs, waste storage may affect certain field activities in OU 12.

**Open Items**

None

**2.13 OU 13 - 100 AREA**

Cleanup of the 100 Area involves the assessment and remediation of 14 IHSSs: Chemical Storage - North, Middle, and South Sites (IHSSs 117.1, 117.2 and 117.3); Oil Burn Pit #1 (IHSS 128); Lithium Metal Destruction Site (IHSS 134); Waste Spills (IHSS 148); Fuel Oil Tank (IHSS 152); Radioactive Site - North Area (IHSS 157.1); Radioactive Site - Building 551 (IHSS 158); Waste Peroxide Drum Burial (IHSS 169); Solvent Burning Ground (IHSS 171); Valve Vault 12 (IHSS 186); Caustic Leak (IHSS 190); and the Hydrogen Peroxide Spill (IHSS 191), and the Scrap Metal Site (IHSS 197).

Assessment will consist of preparing a Phase I RFI/RI Work plan, which will include both an EE and an HHRA. After implementation of this Work Plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. A FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a ROD, release to the public, and implementation of the plan.

OU 13 is within the Industrial Area (IA) at the Rocky Flats Plant and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these IA OUs are being investigated together because of similar field investigation techniques: e.g., surface soil sampling, radiation survey, etc. The main benefit from managing the IA OUs is improved oversight, coordination, and reduced costs.

**Scope of Work Changes This Period**      None

**Technical Approach Changes This Period**      None

<b>IAG Milestone</b>	Submit Draft Phase I RFI/RI Work plan	15 May 92
<b>Accomplishments</b>	Submit Final Phase I RFI/ RI Work plan	12 Oct 92

**Future IAG Milestones Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	8 Aug 94		24 Mar 99
Submit Final Phase I RFI/RI Report	11 Jan 95		02 Dec 99

## **DOE, Rocky Flats Plant**

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### **December Work Activity Status**

DOE received the revision H of Procedure GT. 30, In-Situ Characterization of Radionuclides, and also received a Response to Comments document on EPA's comments on the earlier draft. History Files and related documentation will be turned over to RFP Environmental Quality Support (EQS) this week for final review and eventual release as an approved Standard Operating Procedure (SOP)

A sight modification of the OU 13 sampling plan was approved by the regulatory agencies and DOE to allow for collecting of two asphalt samples in Tent #1 during a repaving project. Sampling was completed in December 1993.

Work began on completing tasks necessary for the OU 13 Readiness Review.

### **Technical Memoranda**

The current FYP indicates TM #1, *Human Health Risk Assessment-Exposure Assessment*, and TM #2, *Human Health Risk Assessment-Modeling*, are scheduled for completion in 1994. These tasks will require rescheduling due to the integration of OUs 8, 9, 10, 12, 13, and 14. Currently, only nonintrusive RI field work is scheduled for OU 13 in FY94. Preparation of the TMs will not begin until FY95.

An addendum to the FSP as required in the OU 13 Phase I RFI/RI Work Plan, which outlines the results of the HPGe and NaI radiation surveys and visual inspection to locate the precise surficial sampling locations, will be prepared and submitted to the regulatory agencies for approval as TM #1 for OU 13.

A nonintrusive TM will be prepared in FY94 summarizing the nonintrusive field work and recommending Stage II activities for the remedial investigation intrusive field work.

### **Planned Work for January**

- Present proposal for the development of a TM that summarizes all the data collected in the past in the entire IA. A comprehensive geostatistical analysis will lead to a better understanding of the nature and extent of contamination within the IA.

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**Project Status**

- Continue work on ensuring that all of the SOPs are issued as controlled documents.

**Problems**

None

**Open Items**

SOPs need to be issued as controlled documents





**2.14 OU 14 - RADIOACTIVE SITES**

Work at the "Radioactive Sites" involves the assessment and remediation of eight IHSSs: Radioactive Site - 700 Area Site #1 and Site #2 (IHSS 131); Radioactive Soil Burial - Building 334 Parking Lot and Soil Dump Area (IHSSs 156.1); Building 444 Parking Lot (IHSS 160) and Building 664 (IHSS 161); and Radioactive Site - 700 Area Site #2 (IHSS 162); and Radioactive Sites - 800 Area which includes the Concrete Slab, Building 886 Spills, and the Building 889 Storage Pad (IHSSs 164.1, 164.2, and 164.3). In 1991, one of two Soil Dump Area IHSSs (156.2) was deleted from OU 14 and added to OU 6.

Assessment will consist of preparing a Phase I RFI/RI Work Plan, which will include both an EE and an HHRA. After implementation of this work plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. An FS to determine the best methods to remediate the area will be conducted as a subsequent phase to the assessment phase.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase and feasibility study of the project. This process includes review and approval by EPA and CDH, followed by a ROD, release to the public, and implementation of the plan.

OU 14 is within the Industrial Area (IA) at the Rocky Flats Plant and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these IA OUs are being investigated together because of similar field investigation techniques: e.g., surface soil sampling, radiation survey, etc. The main benefit from managing the IA OUs is improved oversight, coordination, and reduced costs.

**Scope of Work Changes  
This Period**                      None

**Technical Approach  
Changes This Period**                      None

<b>IAG Milestone Accomplishments</b>	Submit Draft Phase I RFI/RI Work Plan	26 Jun 92
	Submit Final Phase I RFI/RI Work Plan	19 Oct 92

**Future IAG Milestones  
Through FY95**                      None

**December Work Activity  
Status**                      Work continues on the tasks necessary for the OU 14  
Readiness Review.

The OU 14 Final Phase I RFI/RI Work Plan submitted in  
October 1992 was approved by EPA.

Maps of HPGe survey coverage of the OU 14 areas  
outside the PA were generated.

A strategic plan is being developed to locate low-level (not RCRA regulated) waste storage for Decontamination and Decommissioning (D&D) activities.

**Technical Memoranda**

The current FYP indicates TM #1, *Human Health Risk Assessment-Exposure Assessment*, and TM #2, *Human Health Risk Assessment-Modeling*, are scheduled for completion in March 1994. These tasks will require rescheduling due to the integration of OUs 8, 9, 10, 12, 13, and 14. Currently, only nonintrusive RI field work is scheduled for OU 14 in FY94. Preparation of the TMs will not begin until FY95.

An addendum to the FSP as required in the OU 14 Phase I RFI/RI Work Plan, which outlines the results of the HPGe and NaI radiation surveys and visual inspection to locate the precise surficial sampling locations, will be prepared and submitted to the regulatory agencies for approval as TM #1 for OU 14.

A nonintrusive TM will be prepared in FY94 summarizing the nonintrusive field work and recommending Stage II activities for the remedial investigation intrusive field work.

**Planned Work for January**

- Present proposal for the development of a TM that summarizes all the data collected in the past in the entire IA. A comprehensive geostatistical analysis will lead to a better understanding of the nature and extent of contamination within the IA.

**Problems**

Low-Level (not RCRA regulated) waste is stored in the cargo containers in OU 14. This material needs to be relocated during the remedial investigations.

**Open Items**

None

## **2.15 OU 15 - INSIDE BUILDING CLOSURES**

OU 15 is composed of seven IHSSs: IHSS 178, Building 881 - Drum Storage Area; IHSS 179, Building 865 - Drum Storage Area; IHSS 180, Building 883 - Drum Storage Area; IHSS 204, RCRA Unit 45 - Original Uranium Chip Roaster; IHSS 211, RCRA Unit 26, Building 881 - Drum Storage Area; IHSS 212, RCRA Unit 63, Building 374 Drum Storage Area; and IHSS 217, RCRA Unit 32, Building 881 - Cyanide Bench Scale Treatment. The seven IHSSs currently have interim status under RCRA.

Closure Plans for the IHSSs were submitted to CDH during 1988 and 1989. The IHSSs were also included within the IAG to undergo a RCRA Facility Investigation/Remedial Investigation (RFI/RI). During scoping meetings for preparation of the Phase I RFI/RI Work Plan for Operable Unit 15 conducted between EPA, CDH and DOE during April 1992, the Closure Plan and RFI/RI Processes were combined. In affect, Clean Closure Performance Standard (6 CCR 1007-3, Part 265.111) will serve as the Applicable or Relevant and Appropriate Requirements for the OU 15 RFI/RI inside buildings and Closure Plans will no longer be prepared. The public comment period required for the Closure Plan process will be fulfilled through the IM/IRA process of the IAG.

Drums containing solids and liquids were stored at the OU 15 IHSSs. Types of waste stored in drums included oils, coolants and solvents containing chlorinated hydrocarbons (RCRA F001 and F002 wastes) and waste paints and waste metals contaminated with solvents. Hazardous constituents include chlorinated solvents, beryllium, and uranium. Since only one release has been documented in an OU 15 IHSS, the effort is to determine if contamination is present. The major activity proposed is characterization of contamination associated with the OU 15 IHSSs both inside and outside buildings and, if applicable, decontamination of the concrete floors at the indoor facilities and remediation of contamination outside buildings.

During April 1992, IHSS 215, Unit 55.13-Tank T-40, was deleted from OU 15 and added to OU 9 as part of a IHSS realignment pursuant to Part 32, Paragraph 191 (Additional Work or Modification to Work) of the IAG. This change was recommended by DOE in the OU 9 Phase I RFI/RI Work Plan approved by CDH and EPA in April 1992. Similarly, IHSS 212, RCRA Unit 63 was removed from the OU 15 RFI/RI process since it is currently active as a Drum Storage Area and has been included in the Rocky Flats Plant RCRA Part B TRU Mixed Waste permit application.

**Scope of Work Changes This Period**      None

**Technical Approach Changes This Period**      None

<b>IAG Milestone</b>	Submit Draft Phase I RFI/RI Work Plan	01 Jun 92
<b>Accomplishments</b>	Submit Final Phase I RFI/RI Work Plan	26 Oct 92

**DOE, Rocky Flats Plant**

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**Future IAG Milestones  
Through FY95**

<u>IAG Date</u> <u>Milestone Name</u>	<u>Extension</u> <u>Scheduled</u>	<u>Planned</u> <u>Accomplishment</u> <u>Status</u>	<u>Date</u>
Submit Draft Phase I RFI/RI Report	01 Aug 94		1 Aug 94
Submit Final Phase I RFI/RI Report	04 Jan 95		04 Jan 95

**December Work Activity  
Status**

Stages I and II of OU 15 field work, inside buildings, is complete. Approximately 95 percent of the results of chemical analyses from Stage I and II field work were available by December 23, 1993, for evaluation. The first FY94 Milestone for OU 15, a Chemical Analyses Status Report, was received by DOE during December 1993.

A meeting among CDH, DOE, and EG&G personnel was held on December 2, 1993, to discuss the Phase I RFI/RI Work Plan for OU 15 FSP TM #1. It was agreed by all parties that the first two TMs for the HHRA will be included within TM #1. These two TMs for the HHRA address COC and Exposure Pathways in order to help determine the need to conduct Stage III investigations outside of OU 15 buildings.

If Stage III field work, outside buildings, is necessary, it may not be incorporated within the Phase I RFI/RI Reports for OU 15. Stage III work may be conducted as part of a Phase II investigation for OU 15, or IHSSs requiring further work may be transferred to an appropriate OU. It is anticipated from preliminary Stage I and II results that four of OU 15's six IHSSs may not require further work (i.e., No Further Action will be justified with the Phase I RFI/RI Report for OU 15).

**Technical Memoranda**

**Project**

**OU 15 - Inside Building Closures**

TM #1

TM Title

TM Status

Field Sampling Plan (FSP)

When preparation is concluded or is estimated to be concluded:

Projected date of submittal to EPA/CDH: 28 Feb 94

Actual date of submittal :

Date when comments were received:

TM #2  
TM Title  
TM Status

Human Health and Risk Assessment (HHRA)  
When preparation is concluded or is estimated to be concluded:  
Projected date of submittal to EPA/CDH: TBD - may not be necessary unless Stage III field work is performed.  
Actual date of submittal:  
Date when comments were received:

**Planned Work for January**

- Continue to prepare TM #1 by obtaining the remaining chemical analyses results for evaluation upon analyses receipt from analytes and laboratories.

**Problems**

None

**Open Items**

None



**2.16 OU 16 - LOW PRIORITY SITES**

This assessment activity consists of preparing a No Further Action Justification Document (NFAJD) for seven IHSSs: Solvent Spill, Antifreeze Discharge, Steam Condensate Leaks (400 and 700 Areas), Nickel Carbonyl Disposal, Water Treatment Plant Backwash Pond, and Scrap Metal Sites. The NFAJD was approved by the regulatory agencies and the Record of Decision (ROD) process was initiated to close OU 16 as an operable unit (OU) at Rocky Flats Plant.

**Scope of Work Changes  
This Period**      None

**Technical Approach  
Changes This Period**      None

<b>IAG Milestone Accomplishments</b>	Submit Draft No Further Action Justification Document	04 Mar 92
	Submit Final No Further Action Justification Document	30 July 92
	Submit Revised Final NFAJ Document	16 Oct 92

**Future IAG Milestones  
Through FY95**      None

**December Work Activity  
Status**

A Public Comment period for the Proposed Plan/Draft Modification (PP/DM) of Colorado Hazardous Waste Permit for RFP OU 16: Low Priority Sites is scheduled from November 8, 1993, through February 7, 1994. A Public Hearing was held at the Denver West Marriott from 9:00 p.m. on December 8, 1993.

The Public Hearing held on December 8, 1993, for the OU 16 PP/DM went very well. CDH indicated that a request to extend the Public Comment Period for the OU 16 PP/DM because of the December holidays was received during the Public Comment Period. As a result of the request, the Public Comment Period for the OU 16 PP/DM will be extended to February 7, 1994. A responsiveness summary for Public comments on the OU 16 PP/DM and a Record of Decision (ROD) to close OU 16 as an OU at RFP will be prepared upon receipt of public comments from CDH.

**Technical Memoranda**      None

**DOE, Rocky Flats Plant**

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**Planned Work for January**

- The Public Comment Period for the OU 16 PP/DM will be extended to February 7, 1994.

**Problems**

None

**Open Items**

None



**2.17 SITEWIDE ACTIVITIES**

Sitewide activities include several tasks that encompass a wide variety of plans, procedures, reports, studies, and other activities required by the IAG and that apply to RFP environmental restoration activities in general. The activities include, but are not limited to, the HSP, a Sampling and Analysis Plan, a Plan for Prevention of Contaminant Dispersion, the Community Relations Plan, the Discharge Limits for Radionuclides Work Plan, Treatability Study deliverables, the Background Study Plan, Administrative Record, State Response (support for CDH oversight), Historical Release Report, Operations Management, Decontamination Facilities, Contractor yard support, ER Waste handling facilities, geologic characterization, hydrogeologic characterization, and ground water monitoring.

**Scope of Work Changes  
This Period**                      None

**Technical Approach  
Changes This Period**                      None

<b>IAG Milestone Accomplishments</b>	Submit Draft Background Study Report (Water)	15 Dec 89
	Submit Draft Background Study Report (Soils)	15 Dec 89
	Submit Draft Community Survey Plan	23 Jan 90
	Submit Final Community Survey Plan	22 Mar 90
	Submit Draft Health and Safety Plan	15 Aug 90
	Submit Draft Quality Assurance Project Plan	29 Aug 90
	Submit Draft Standard Operating Procedures	29 Aug 90
	Submit Draft Plan for Prevention of Contaminant Dispersion	19 Sep 90
	Submit Draft Treatability Study Plan	21 Sep 90
	Submit Draft Community Relations Plan	01 Nov 90
	Submit Final Health and Safety Plan	12 Nov 90
	Submit Revised Background Study Report	21 Dec 90
	Submit Final Community Relations Plan	22 Jan 91
	Submit Final Quality Assurance Project Plan	01 Mar 91
	Submit Final Standard Operating Procedures	01 Mar 91
	Submit Draft Radionuclides Discharge Limits Plan	05 Apr 91
	Submit Community Relations Plan Responsiveness Summary	21 Jun 91
	Submit Final Treatability Study Plan	03 Jun 91
	Submit Final Plan for Prevention of Contaminant Dispersion	22 Jul 91

**DOE, Rocky Flats Plant**

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Submit Final Plan Discharge Limits Radionuclides	16 Sep 91
Submit Final PPCD and Responsiveness Summary	25 Nov 91
Submit Draft Historical Release Report	08 Jan 92
Submit Responsiveness Summary for DLRP	31 Jan 92
Submit Final Historical Release Report	03 Jun 92
Submit Annual Treatability Study Report	08 Mar 93

**Future IAG Milestones Through FY95**

None

**December Work Activity Status****Sitewide Activities****Sitewide Treatability Studies**

**Sitewide Treatability Studies Annual Report** - The second draft of the Annual Report was delivered to DOE on December 20, 1993, for review and comment. DOE review is scheduled to be completed on January 7, 1994.

**Magnetic Separation** - The sole source purchase order was awarded to Los Alamos National Laboratories (LANL) for this treatability study on December 6, 1993. A kick-off meeting with representatives from DOE and EG&G was held on December 15, 1993, at LANL. The magnetic separations laboratory in Technical Area (TA) 55 was visited while a test run was made on a copper oxide surrogate. Discussions on the experimental procedures for the treatability study took place and LANL representatives made a presentation on the theory and practice of magnetic separation. Testing on RFP soil fractions will commence on schedule in January 1994.

**Solar Detoxification** - A cost estimate was developed for the Solar Detoxification Treatability Study, which indicated that additional funds would be required for the project beyond those already allocated in the budget. DOE permission is required to transfer funds from other projects to support this project.

A draft SOW was completed for the project and is undergoing revision. A contract with the technology vendor will be pursued under the Master Task System (MTS) (Area #3) contract system.

A possible source of test water for the project was identified as Station Number SW-59. Analyses from SW-

59 will be reviewed to ensure that the water meets the proposed test criteria.

**Bioremediation** - Several projects have been chosen for testing. These projects include composting and methanotrophic degradation of chlorinated solvent contaminated soils and biodenitrification of Solar Ponds water and/or sludge. A meeting was held with DOE, Los Alamos Technology Office (LATO), EG&G, and university representatives to discuss the projects. The meeting provided some focus on the scope of the projects and what information was needed to characterize the media to be treated.

**Other Sitewide Operations**

**Administrative Record (AR)** - The four public repositories were sent the updated OU 16 AR File to ensure that these records were available to the public during the public comment period from November 8, 1993 through February 7, 1994.

**Community Relations** - The Community Relations Plan is being updated. The current scheduled date for the draft revised plan is January 1994.

The Technical Review Group (TRG) Meeting was held on December 6, 1993. The topic of discussion was the comment resolution process.

**Pond Water Management IM/IRA** - The schedule and strategy for the Pond Water Management IM/IRA is being discussed by DOE. DOE requested that the agencies submit comments on the Draft IM/IRA by December 17, 1993. DOE reviewed the Draft IM/IRA and prepared a position paper/summary statement in December 1993. DOE will submit written comments to EG&G concerning this document and will also give EG&G guidance and direction concerning future actions on the IM/IRA by January 17, 1994.

A revised draft schedule for the Pond Water IM/IRA DD was prepared that includes schedule assumptions made by DOE concerning the DD. Required modifications to the project schedule and scope will be based on the guidance and direction received from DOE on January 17, 1994.

**Interim Measures/Interim Remedial Action Plan (IM/IRAP) for the Industrial Area** - A performance meeting was held December 20, 1993. This meeting

updated all involved parties as to the progress of the project. At this meeting, a proposed document outline was submitted to the regulators for review. This outline was approved prior to the December 24, 1993, holiday shutdown. Preliminary sections from the document will be passed out for review and comment. This review cycle is not part of the schedule, but will provide additional technical interaction.

A meeting was set up with the emergency RFP response group to get a briefing on RFP emergency response capabilities. Information from this meeting will be incorporated into the IM/IRA/DD.

**Industrial Area (IA) Integrated OUs (8, 9, 10, 12, 13, and 14)** - The draft final IA Environmental Evaluation (EE) packet including the Implementation Plan, FSP, Phase I Data Summary Addendum, Phase II Data Summary, Phase III Data Summary, and IA EE TM was received by DOE on December 15, 1993.

**Planned Work for January**

- Continue updates on AR.
- Continue Community Relations activities.

**Problems**

None

**Open Items**

None

## SECTION 210 ROUTINE ENVIRONMENTAL MONITORING

The following generalized sampling schedule for Routine Environmental Monitoring is provided as requested in Section 210 of the IAG. Detailed quarterly monitoring schedules are prepared in advance and are available to EPA and CDH upon request from the Environmental Management Department and EG&G Rocky Flats, Inc. The schedules are lengthy; therefore, they are not reproduced here. An EPA- or State-authorized representative may make arrangements to observe fieldwork and to obtain split or duplicate samples.

### 3.1 SURFACE WATER AND SEDIMENTS

- Each of the Surface Water Stations (approximately 20 stations) are sampled quarterly.
- Each of the Sediment Stations (approximately 10 stations) are sampled quarterly.
- Each surface water and sediment sample is analyzed for the following parameters:

CLP TCL VOA	Radionuclides
Metals CLP TAL & Non-TAL	Temperature
Field Parameters	TDS/TSS
Specific Conductivity	pH
Dissolved Oxygen (DO)	Nutrients
Major Anions	

- Additionally, sediment samples are analyzed for: CLP-Semi VOAs, CLP-Pesticides/PCBs  
Herbicides-619

### 3.2 SOILS

- Each of the Soil Stations (located at 1- and 2-mile radii from the plant center) are sampled annually.
- Each soil sample is analyzed for plutonium and americium.

### 3.3 GROUND WATER

A total of 410 Ground water Stations are sampled quarterly; this includes alluvial wells, bedrock wells, and pre-1986 wells. Approximately one third of the wells are monitored monthly for water levels. Each ground water sample is analyzed for CLP, TCL, VOAs, TAL, Metals, as well as the following parameters:

**DOE, Rocky Flats Plant****Radiochemical Parameters**

Gross Alpha  
Gross Beta  
Plutonium  
Americium  
Strontium  
Tritium  
Uranium  
Cesium

**Inorganic Parameters**

Nitrate/Nitrite  
Total Phosphorous  
Ortho-Phosphate  
Ammonia  
TDS  
Chlorine  
Fluorine  
Sulfate  
Carbonate  
Bicarbonate  
TSS  
Dissolved CLP & additional metals  
Cyanide  
CLP Volatile Organic Constituents

**Field Parameters**

Specific Conductivity  
Temperature  
Turbidity  
pH

## Contractor/Subcontractor Identification

### SECTION 4 CONTRACTOR/SUBCONTRACTOR IDENTIFICATION

Contractors and subcontractors being used on the RFP ER Program and the work they are performing are identified on the following list as required by paragraph 13 of the IAG.

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
1	Assessment	Ebasco	Dames & Moore	CMS/FS Report	Jan 92
1	Assessment	Dames & Moore		Public Health Evaluation	Apr 93
1	Assessment	Roy F. Weston		Revise RI Report, respond to agency comments	Feb 93
1	Assessment	S.M. Stoller		Environmental Evaluation	Apr 93
1	Remediation	Resource Tech.		B-891 Treatment System Operations Group, Inc. (RTG)	
2	Assessment	Woodward-Clyde		OU 2 RFI/RI Work Plan (alluvial and bedrock) and RI field work (drilling, well completion/development)	Sep 90
2	Assessment	Ebasco	S.M. Stoller	Environmental Evaluation	Feb 91
	Assessment	Woodward-Clyde	Layne	OU 2 RFI/RI Work Plan (bedrock), surficial soils	Mar 93
2	Remediation (RFG in April)	Reidel		Installation and operation of the water treatment system for South Walnut Creek Phase of OU 2 IRA	Jan 91
3	Assessment	IT Corporation	CH2M Hill	OU 3 Field Work and RI Report	Apr 92
3	Assessment	MRI		Wind Tunnel/Soil Resuspension Study	Aug 92
4	Remediation	HNUS	Halliburton Spec. Services	Demobilize	Sep 91
4	Assessment	Parsons/Eng Science	Rust I&E	Implement the Phase I RFI/RI Work Plan, includes drilling, sampling radiation surveys, etc.	Aug 92
4	Remediation	Parsons/ Eng Science		Development of IM/IRA DD & conceptual design	
4	Remediation	ERM-Rocky Mountain	Geraghty & Miller	Post-closure monitoring plan	Nov 93

**DOE, Rocky Flats Plant**

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
5	Assessment	ASI Blackhawk Geo Walsh & Assoc. Layne Envir. Service S.M. Stoller Adv. Terra Testing	Dames & Moore	Implementation of OU 5 Work Plan (excluding EE)  Utility Mgmt. Service	Jun 92
5	Assessment	S.M. Stoller		Implementation of EE section of OU 5 Work Plan	Sep 92
6	Assessment	Woodward-Clyde	Lane, Ogden, Geo Environmental	OU 6 RF/RI Work Plan and Quality Assurance Addendum	Aug 92
6	Assessment	S.M. Stoller		Implementation of EE section of OU 6 Work Plan	Sep 92
7	Assessment	S.M. Stoller	Walsh & Assoc.	OU 7 RF/RI Work Plan Implementation including EE Plan and QA Addendum	Nov 92
8	Assessment	Jacobs Eng.	Walsh & Assoc.	(No Sub tier subcontract) implement the Phase I RF/RI Work Plan for non-intrusive field work for the IA OUs.	Aug 93
9	Assessment	Jacobs Eng.	Walsh & Assoc.	(No Sub tier subcontract) implement the Phase I RF/RI Work Plan for non-intrusive field work for the IA OUs.	Aug 93
10	Assessment	Jacobs Eng.	Walsh & Assoc.	(No Sub tier subcontract) implement the Phase I RF/RI Work Plan for non-intrusive field work for the IA OUs.	Aug 93
12	Assessment	Jacobs Eng.	Walsh & Assoc.	(No Sub tier subcontract) implement the Phase I RF/RI Work Plan for non-intrusive field work for the IA OUs.	Aug 93
13	Assessment	Jacobs Eng.	Walsh & Assoc.	(No Sub tier subcontract) implement the Phase I RF/RI Work Plan for non-intrusive field work for the IA OUs.	Aug 93
14	Assessment	Jacobs Eng.		(No Sub tier subcontract) implement the Phase I RF/RI Work Plan for non-intrusive field work for the IA OUs.	Aug 93
15	Assessment	ERM-Rocky Mtn.	G.S. Miller, Inc.	Implementation of the RF/RI Work Plan	Mar 93
SW	HRR	IT Corporation	Doty & Assoc.	Prepare HRR	Feb 91
SW	Adm. Record	QuantaLex		Maintain IAG Administrative Record	Oct 90
SW	Geo. Char.	Jacobs Eng.		Well Abandonment and Replacement	Mar 93
SW	Geo. Char.	Colorado State University		Support M.S. thesis of Structural Geology, of Front Range Area Near RFP	Nov 91
SW	Geo. Char.	S.M. Stoller		Prepare 1992 Annual RCRA Report and Addendum	Jan 93



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**Contractor/Subcontractor Identification**

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
SW	Geo. Char.	Colorado School of Mines		Masters level training program in ES and Engineering	Aug 92
SW	Geo. Char.	Woodward-Clyde		Support for the SSWMS	Feb 93
SW	Geo. Char.	Colorado State University		Sequential Extraction	April 92
SW	Geo. Char.	University of Colorado		Soil Monitoring Vadose Zone	Jun 92
SW	Geo. Char.	S.M. Stoller		Spatial Analysis/Computer Support	Mar 93
SW	Geo. Char.	Woodward Clyde	SAIC/Wright Water		Jan 93
SW	Monitoring	IT Corporation		Analytical Services for ground water, surface water, and sediment	Jul 90
SW	QA	SAIC		Develop and implement QA program and field operations oversight	Dec 90
PM	Support	S.M. Stoller		Program Management Support	Oct 92
PM	QA Support	SAIC		Provide QA/QC support to ER Program	Nov 92



## ACRONYMS

ADS	Activity Data Sheet
AIP	Agreement In Principle
ALARA	As Low As Reasonably Attainable
AOC	Area of Concern
ARAR	Applicable or Relevant and Appropriate Requirements
ASRP	Accelerated Sludge Removal Project
BAT	Best Available Technology
BCP	Baseline Change Proposal
BIO	Basis for Interim Operations
BOA	Basic Ordering Agreement
BRAP	Baseline Risk Assessment Plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CHWA	Colorado Hazardous Waste Act
CMS	Corrective Measures Study
COC	Contaminant Of Concern
CPT	Cone Penetrometer Testing
CRP	Community Relations Plan
CSU	Colorado State University
DAC	Derived Air Concentration
DD	Decision Document
D&D	Decontamination & Decommissioning
DCN	Document Change Notice
DLRP	Discharge Limits Radionuclides Plan
DM	Draft Modification
DNAPL	Dense Non-Aqueous Phase Liquids
DOE	Department of Energy
DQO	Data Quality Objectives
DVP	Data Validation Plan
E&WM	Environmental and Waste Management
EA	Environmental Assessment
EE	Environmental Evaluation
EM	Environmental Management
END	Environmental NEPA Division
EPA	Environmental Protection Agency
EQS	Environmental Quality Support
ER	Environmental Restoration
ERA	Ecological Risk Assessment
ESE	Environmental Science and Engineering
FIDLER	Field Instrument for Detection of Low Energy Radiation
FS	Feasibility Study
FSP	Field Sampling Plan
FTU	Field Treatability Unit

FYP	Five-Year Plan
GAC	Granular Activated Carbon
GIS	Geographic Information System
GPR	Ground Penetrating Radar
H&S	Health and Safety
HSP	Health and Safety Plan
HAP	Health Advisory Panel
HGMS	High Gradient Magnetic Separation
HHRA	Human Health Risk Assessment
HPGe	High Purity Germanium
HQ	Headquarters
HRR	Historical Release Report
IA	Industrial Area
IAG	Interagency Agreement
ICP-MS	Inductively Coupled Plasma Mass Spectrometer
IDM	Investigative Derived Material
IHSS	Individual Hazardous Substance Site
IM	Interim Measure
IRA	Interim Remedial Action
IRAP	Interim Remedial Action Plan
ITS	Interceptor Trench System
IWCP	Integrated Work Control Package
IX	Ion Exchange
LANL	Los Alamos National Laboratory
LATO	Los Alamos Technology Office
LL	Low-level
LLMW	Low-level Mixed Waste
mg/l	milligrams per liter
MOU	Memorandum of Understanding
MTS	Master Task Subcontract
MSVEU	Mobile Soil Vapor Extraction Unit
NAPLs	Non-Aqueous Phase Liquids
NEPA	National Environmental Policy Act
NFAJ	No Further Action Justification
NTS	Nevada Test Site
O&M	Operations and Management
OPWL	Original Process Waste Line
ORR	Operational Readiness Review
OTD	Office of Technology Development
OU	Operable Unit
PA	Protected Area
ppb	Parts per billion
PCCB	Plant Change Control Board
PCP	Process Control Plan
PAC	Potential Area of Concern
PIT	Process Improvement Team
PP	Proposed Plan
PPCD	Plan for Prevention of Contaminant Dispersion
PPE	Personal Protective Equipment

PU&D	Property Utilization and Disposal
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QP	Quality Plan
RAGS	Risk Assessment Guidance for Superfund
RCA	Radiological Control Area
RCRA	Resource Conservation and Recovery Act
RFEDS	Rocky Flats Environmental Database System
RFI	RCRA Facilities Investigation
RFP	Rocky Flats Plant
RI	Remedial Investigation
ROD	Record of Decision
RPT	Radiological Protection Technician
SAP	Sampling and Analysis Plan
SAR	Safety Analysis Report
SEP	Solar Evaporation Ponds
SID	South Interceptor Ditch
SMO	Sample Management Office
SOP	Standard Operating Procedure
SOW	Statement of Work
SPPO	Solar Ponds Program Office
STP	Sewage Treatment Plant
SVS	Soil Vapor Survey
SW	Surface Water
TA	Technical Area
TCE	Trichloroethene
TDS	Total Dissolved Solids
TIE	Technology Information in Exchange
TM	Technical Memorandum
TRG	Technical Review Group
TSR	Treatability Study Report
TSS	Total Suspended Solids
UBC	Under Building Contaminations
USFWS	United States Fish and Wildlife Service
UV	Ultraviolet
VOA	Volatile Organic Analyte
VOC	Volatile Organic Compound
WBS	Work Breakdown Structure
WS	Waste Solidification